1, TITLE: Flexible Representative Democracy: An Introduction with Binary Issues
https://www.ijcai.org/proceedings/2019/1
AUTHORS: Ben Abramowitz, Nicholas Mattei
HIGHLIGHT: We introduce Flexible Representative Democracy (FRD), a novel hybrid of Representative Democracy (RD) and Direct Democracy (DD), in which voters can alter the issue-dependent weights of a set of elected representatives.

2, TITLE: Portioning Using Ordinal Preferences: Fairness and Efficiency
https://www.ijcai.org/proceedings/2019/2
AUTHORS: Stéphane Airiau, Haris Aziz, Ioannis Caragiannis, Justin Kruger, Jérôme Lang, Dominik Peters
HIGHLIGHT: We introduce a family of rules for portioning, inspired by positional scoring rules.

3, TITLE: An Efficient Algorithm for Skeptical Preferred Acceptance in Dynamic Argumentation Frameworks
https://www.ijcai.org/proceedings/2019/3
AUTHORS: Gianvincenzo Alfano, Sergio Greco, Francesco Parisi
HIGHLIGHT: In this paper we devise an efficient algorithm for computing the skeptical preferred acceptance in dynamic AFs.

4, TITLE: Strategic Signaling for Selling Information Goods
https://www.ijcai.org/proceedings/2019/4
AUTHORS: Shani Alkoby, David Sarne, Igal Milchtaich
HIGHLIGHT: This paper studies the benefit in using signaling by an information seller holding information that can completely disambiguate some uncertainty concerning the state of the world for the information buyer.

5, TITLE: Probabilistic Strategy Logic
https://www.ijcai.org/proceedings/2019/5
AUTHORS: Benjamin Aminof, Marta Kwiatkowska, Bastien Maubert, Aniello Murano, Sasha Rubin
HIGHLIGHT: We introduce Probabilistic Strategy Logic, an extension of Strategy Logic for stochastic systems.

6, TITLE: Multi-Agent Pathfinding with Continuous Time
https://www.ijcai.org/proceedings/2019/6
AUTHORS: Anton Andreychuk, Konstantin Yakovlev, Dor Atzmon, Roni Stern
HIGHLIGHT: In this work, we propose a MAPF algorithm that do not assume any of these assumptions, is complete, and provides provably optimal solutions.

7, TITLE: Weighted Maxmin Fair Share Allocation of Indivisible Chores
https://www.ijcai.org/proceedings/2019/7
AUTHORS: Haris Aziz, Hau Chan, Bo Li
HIGHLIGHT: We initiate the study of indivisible chore allocation for agents with asymmetric shares.

8, TITLE: Fair Allocation of Indivisible Goods and Chores
https://www.ijcai.org/proceedings/2019/8
AUTHORS: Haris Aziz, Ioannis Caragiannis, Ayumi Igarashi, Toby Walsh
HIGHLIGHT: In this paper, we consider a more general scenario where an agent may have negative or positive utility for each item.

9, TITLE: Strategyproof and Approximately Maxmin Fair Share Allocation of Chores
https://www.ijcai.org/proceedings/2019/9
AUTHORS: Haris Aziz, Bo Li, Xiaowei Wu
HIGHLIGHT: The fairness concept we consider in this paper is maxmin share (MMS) fairness.

10, TITLE: Stable and Envy-free Partitions in Hedonic Games
https://www.ijcai.org/proceedings/2019/10
AUTHORS: Nathanaël Barrot, Makoto Yokoo
HIGHLIGHT: In this paper, we study coalition formation in hedonic games through the fairness criterion of envy-freeness.

11, TITLE: How Hard Is the Manipulative Design of Scoring Systems?
https://www.ijcai.org/proceedings/2019/11
AUTHORS: Dorothea Baumeister, Tobias Hogrebe
HIGHLIGHT: We study the computational complexity of two related decision problems.

12, TITLE: The Price of Fairness for Indivisible Goods
https://www.ijcai.org/proceedings/2019/12
AUTHORS: Xiaohui Bei, Xinhang Lu, Pasin Manurangsi, Warut Suksompong
HIGHLIGHT: In this paper, we focus instead on notions with guaranteed existence, including envy-freeness up to one good (EF1), balancedness, maximum Nash welfare (MNW), and leximin.

13, TITLE: Strategy Logic with Simple Goals: Tractable Reasoning about Strategies
https://www.ijcai.org/proceedings/2019/13
AUTHORS: Francesco Belardinelli, Wojciech Jamroga, Damian Kurpiewski, Vadim Malvone, Aniello Murano
HIGHLIGHT: In this paper we introduce Strategy Logic with simple goals (SL[SG]), a fragment of Strategy Logic that strictly extends the well-known Alternating-time Temporal Logic ATL by introducing arbitrary quantification over the agents' strategies.

14, TITLE: Fairness Towards Groups of Agents in the Allocation of Indivisible Items
https://www.ijcai.org/proceedings/2019/14
AUTHORS: Nawal Benabbou, Mithun Chakraborty, Edith Elkind, Yair Zick
HIGHLIGHT: In this paper, we study the problem of matching a set of items to a set of agents partitioned into types so as to balance fairness towards the types against overall utility/efficiency.

15, TITLE: Optimality and Nash Stability in Additive Separable Generalized Group Activity Selection Problems
https://www.ijcai.org/proceedings/2019/15
AUTHORS: Vittorio Bilò, Angelo Fanelli, Michele Flammini, Gianpiero Monaco, Luca Moscardelli
HIGHLIGHT: We consider additively separable GGASPs, where every agent has a separate valuation for each activity as well as for any other agent, and her overall utility is given by the sum of the valuations she has for the selected activity and its participants.

16, TITLE: An Experimental View on Committees Providing Justified Representation
https://www.ijcai.org/proceedings/2019/16
AUTHORS: Robert Bredereck, Piotr Faliszewski, Andrzej Kaczmarczyk, Rolf Niedermeier
HIGHLIGHT: We provide an experimental study of committees that achieve (proportional/extended) justified representation (JR/PJR/EJR).

17, TITLE: A Contribution to the Critique of Liquid Democracy
https://www.ijcai.org/proceedings/2019/17
AUTHORS: Ioannis Caragiannis, Evi Micha
HIGHLIGHT: We revisit a recent model by Kahng et al. [2018] and conclude with three negative results, criticizing an important assumption of their modeling, as well as liquid democracy more generally.

18, TITLE: Be a Leader or Become a Follower: The Strategy to Commit to with Multiple Leaders
https://www.ijcai.org/proceedings/2019/18
AUTHORS: Matteo Castiglioni, Alberto Marchesi, Nicola Gatti
HIGHLIGHT: We study the problem of computing correlated strategies to commit to in games with multiple leaders and followers.

19, TITLE: On the Problem of Assigning PhD Grants
https://www.ijcai.org/proceedings/2019/19
AUTHORS: Katarína Cechlárová, Laurent Gourvès, Julien Lesca
HIGHLIGHT: In this paper, we study the problem of assigning PhD grants.

20, TITLE: Maximin-Aware Allocations of Indivisible Goods
https://www.ijcai.org/proceedings/2019/20
AUTHORS: Hau Chan, Jing Chen, Bo Li, Xiaowei Wu
HIGHLIGHT: In particular, we propose the maximin aware (MMA) fairness measure, which guarantees that every agent, given the bundle allocated to her, is aware that she does not envy at least one other agent, even if she does not know how the other goods are distributed among other agents.

21, TITLE: Reachability and Coverage Planning for Connected Agents
https://www.ijcai.org/proceedings/2019/21
AUTHORS: Tristan Charrier, Arthur Queffelec, Ocan Sankur, François Schwarzentruber
HIGHLIGHT: We establish the complexity of these problems on known classes, and introduce a new class called sight-moveable graphs which admit efficient algorithms.

22, TITLE: Approximately Maximizing the Broker's Profit in a Two-sided Market
https://www.ijcai.org/proceedings/2019/22
AUTHORS: Jing Chen, Bo Li, Yingkai Li
HIGHLIGHT: We study how to maximize the broker's (expected) profit in a two-sided market, where she buys items from a set of sellers and resells them to a set of buyers.

23, TITLE: Election with Bribe-Effect Uncertainty: A Dichotomy Result
https://www.ijcai.org/proceedings/2019/23
AUTHORS: Lin Chen, Lei Xu, Shouhuai Xu, Zhimin Gao, Weidong Shi
HIGHLIGHT: In this paper, we initiate the study of a more realistic model where each voter is associated with a willingness function, rather than a fixed threshold value.

24, TITLE: Dispatching Through Pricing: Modeling Ride-Sharing and Designing Dynamic Prices
https://www.ijcai.org/proceedings/2019/24
AUTHORS: Mengjing Chen, Weiran Shen, Pingzhong Tang, Song Zuo
HIGHLIGHT: In this paper, we aim to tackle this problem via an economic approach.

25, TITLE: ATSIS: Achieving the Ad hoc Teamwork by Sub-task Inference and Selection
https://www.ijcai.org/proceedings/2019/25
AUTHORS: Shuo Chen, Ewa Andrejczuk, Athirai A. Irissappane, Jie Zhang
HIGHLIGHT: For this reason, we present Ad Hoc Teamwork by Sub-task Inference and Selection (ATSIS) algorithm that uses a sub-task inference without relying on teammates' models.

26, TITLE: Network Formation under Random Attack and Probabilistic Spread
https://www.ijcai.org/proceedings/2019/26
AUTHORS: Yu Chen, Shahin Jabbari, Michael Kearns, Sanjeev Khanna, Jamie Morgenstern
HIGHLIGHT: Our goal is to understand the properties of the equilibrium networks formed in this game.

27, TITLE: Cap-and-Trade Emissions Regulation: A Strategic Analysis
https://www.ijcai.org/proceedings/2019/27
AUTHORS: Frank Cheng, Yagil Engel, Michael P. Wellman
HIGHLIGHT: We find that while cap-and-trade results improves efficiency overall, consumers bear a disproportionate share of regulation cost, as firms use credit trading to segment the vehicle market.

28, TITLE: A Value-based Trust Assessment Model for Multi-agent Systems
https://www.ijcai.org/proceedings/2019/28
AUTHORS: Kinzang Chhogyal, Abhaya Nayak, Aditya Ghose, Hoa K. Dam
HIGHLIGHT: In this paper, based on the premise that the more values two agents share, the more they should trust one another, we propose a simple approach to trust assessment between agents based on values, taking into account if agents trust cautiously or boldly, and if they depend on others in carrying out a task.

29, TITLE: Exploiting Social Influence to Control Elections Based on Scoring Rules
https://www.ijcai.org/proceedings/2019/29
AUTHORS: Federico Corò, Emilio Cruciani, Gianlorenzo D'Angelo, Stefano Ponziani
HIGHLIGHT: We introduce Linear Threshold Ranking, a natural extension of Linear Threshold Model, which models the change of opinions taking into account the amount of exercised influence.

30, TITLE: Civic Crowdfunding for Agents with Negative Valuations and Agents with Asymmetric Beliefs
https://www.ijcai.org/proceedings/2019/30
AUTHORS: Sankarshan Damle, Moin Hussain Moti, Praphul Chandra, Sujit Gujar
HIGHLIGHT: In this work, we present novel mechanisms which break these two barriers, i.e., mechanisms which incorporate negative valuation and asymmetric belief, independently.

31, TITLE: Anytime Heuristic for Weighted Matching Through Altruism-Inspired Behavior
https://www.ijcai.org/proceedings/2019/31
AUTHORS: Panayiotis Danassis, Aris Filos-Ratsikas, Boi Faltings
HIGHLIGHT: We present a novel anytime heuristic (ALMA), inspired by the human principle of altruism, for solving the assignment problem.

32, TITLE: AsymDPOP: Complete Inference for Asymmetric Distributed Constraint Optimization Problems

https://www.ijcai.org/proceedings/2019/32
AUTHORS: Yanchen Deng, Ziyu Chen, Dingding Chen, Wenxin Zhang, Xingqiong Jiang
HIGHLIGHT: Rather than disclosing private functions explicitly to facilitate local eliminations, we solve the problem by enforcing delayed eliminations and propose AsymDPOP, the first inference-based complete algorithm for ADCOPs.

33, TITLE: Preferred Deals in General Environments
https://www.ijcai.org/proceedings/2019/33
AUTHORS: Yuan Deng, Sébastien Lahaie, Vahab Mirrokni
HIGHLIGHT: We consider the problem of designing preferred deals (inventory, price, quantity) in the presence of general convex constraints, including budget constraints, and propose an approximation algorithm to maximize the revenue obtained from the deals.

34, TITLE: A Parameterized Perspective on Protecting Elections
https://www.ijcai.org/proceedings/2019/34
AUTHORS: Palash Dey, Neeldhara Misra, Swaprava Nath, Garima Shakya
HIGHLIGHT: We propose two greedy algorithms for the OPTIMAL DEFENSE problem and empirically show that they perform effectively on reasonable voting profiles.

35, TITLE: Spotting Collective Behaviour of Online Frauds in Customer Reviews
https://www.ijcai.org/proceedings/2019/35
AUTHORS: Sarthika Dhawan, Siva Charan Reddy Gangireddy, Shiv Kumar, Tanmoy Chakraborty
HIGHLIGHT: Here, we propose DeFrauder, an unsupervised method to detect online fraud reviewer groups.

36, TITLE: Equilibrium Characterization for Data Acquisition Games
https://www.ijcai.org/proceedings/2019/36
AUTHORS: Jinshuo Dong, Hadi Elzayn, Shahin Jabbari, Michael Kearns, Zachary Schutzman
HIGHLIGHT: We study a game between two firms which each provide a service based on machine learning.

37, TITLE: Protecting Elections by Recounting Ballots
https://www.ijcai.org/proceedings/2019/37
AUTHORS: Edith Elkind, Jiarui Gan, Svetlana Obraztsova, Zinovi Rabinovich, Alexandros A. Voudouris
HIGHLIGHT: In this work, we consider a two-stage voting manipulation scenario.

38, TITLE: Schelling Games on Graphs
https://www.ijcai.org/proceedings/2019/38
AUTHORS: Edith Elkind, Jiarui Gan, Ayumi Igarashi, Warut Suksompong, Alexandros A. Voudouris
HIGHLIGHT: We consider strategic games that are inspired by Schelling's model of residential segregation.

39, TITLE: Reallocating Multiple Facilities on the Line
https://www.ijcai.org/proceedings/2019/39
AUTHORS: Dimitris Fotakis, Loukas Kavouras, Panagiotis Kostopanagiotis, Philip Lazos, Stratis Skoulakis, Nikos Zarifis
HIGHLIGHT: Using an LP-based approach, we present a polynomial time algorithm that computes the optimal solution for any number of facilities.

40, TITLE: Equitable Allocations of Indivisible Goods
https://www.ijcai.org/proceedings/2019/40
AUTHORS: Rupert Freeman, Sujoy Sikdar, Rohit Vaish, Lirong Xia
HIGHLIGHT: In this work, we study equitable allocations of indivisible goods among agents with additive valuations.

41, TITLE: Average-case Analysis of the Assignment Problem with Independent Preferences
https://www.ijcai.org/proceedings/2019/41
AUTHORS: Yansong Gao, Jie Zhang
HIGHLIGHT: In this paper, we offer an affirmative answer to this question by showing that the ratio is bounded by $1/\mu$ when the preference values are independent and identically distributed random variables, where μ is the expectation of the value distribution.

42, TITLE: Improving Nash Social Welfare Approximations
https://www.ijcai.org/proceedings/2019/42
AUTHORS: Jugal Garg, Peter McGlaughlin

HIGHLIGHT: We present novel definitions of fairness concepts in terms of market prices, and design a new scheme to round a market equilibrium into an integral allocation that provides most of the fairness properties of an integral max NSW allocation.

43, TITLE: On the Efficiency and Equilibria of Rich Ads
https://www.ijcai.org/proceedings/2019/43
AUTHORS: MohammadAmin Ghiasi, MohammadTaghi Hajiaghayi, Sébastien Lahaie, Hadi Yami
HIGHLIGHT: In this paper, we consider a model where several slots are available on the search results page, as in the classic generalized second-price auction (GSP), but now a bidder can be allocated several consecutive slots, which are interpreted as a rich ad.

44, TITLE: Identifying vulnerabilities in trust and reputation systems
https://www.ijcai.org/proceedings/2019/44
AUTHORS: Taha D. Güne?, Long Tran-Thanh, Timothy J. Norman
HIGHLIGHT: We present a novel method for automatically identifying vulnerabilities in such systems by formulating the problem as a derivative-free optimisation problem and applying efficient sampling methods.

45, TITLE: An Asymptotically Optimal VCG Redistribution Mechanism for the Public Project Problem
https://www.ijcai.org/proceedings/2019/45
AUTHORS: Mingyu Guo
HIGHLIGHT: We propose an asymptotically optimal mechanism, which achieves a worst-case efficiency ratio of 1, under a minor technical assumption: we assume the agents' valuations are rational numbers with bounded denominators.

46, TITLE: On Succinct Encodings for the Tournament Fixing Problem
https://www.ijcai.org/proceedings/2019/46
AUTHORS: Sushmita Gupta, Saket Saurabh, Ramanujan Sridharan, Meirav Zehavi
HIGHLIGHT: In this paper, we present the first polynomial kernelization for TFP parameterized by the feedback arc set number of the input tournament.

47, TITLE: On Computational Tractability for Rational Verification
https://www.ijcai.org/proceedings/2019/47
AUTHORS: Julian Gutierrez, Muhammad Najib, Giuseppe Perelli, Michael Wooldridge
HIGHLIGHT: In this paper we show that the complexity of rational verification can be greatly reduced by restricting specifications to GR(1), a fragment of LTL that can represent most response properties of reactive systems.

48, TITLE: Swarm Engineering Through Quantitative Measurement of Swarm Robotic Principles in a 10,000 Robot Swarm
https://www.ijcai.org/proceedings/2019/48
AUTHORS: John Harwell, Maria Gini
HIGHLIGHT: We propose a set of quantitative metrics for scalability, flexibility, and emergence which are capable of addressing these needs during the system design process.

49, TITLE: Achieving a Fairer Future by Changing the Past
https://www.ijcai.org/proceedings/2019/49
AUTHORS: Jiafan He, Ariel D. Procaccia, Alexandros Psomas, David Zeng
HIGHLIGHT: We study the problem of allocating T indivisible items that arrive online to agents with additive valuations.

50, TITLE: Compact Representation of Value Function in Partially Observable Stochastic Games
https://www.ijcai.org/proceedings/2019/50
AUTHORS: Karel Horák, Branislav Bošanský, Christopher Kiekintveld, Charles Kamhoua
HIGHLIGHT: We propose an abstraction technique that addresses this curse of dimensionality by projecting the high-dimensional beliefs onto characteristic vectors of significantly lower dimension (e.g., marginal probabilities).

51, TITLE: Explicitly Coordinated Policy Iteration
https://www.ijcai.org/proceedings/2019/51
AUTHORS: Yujing Hu, Yingfeng Chen, Changjie Fan, Jianye Hao
HIGHLIGHT: Based on the necessary conditions of an optimal policy, we propose the explicitly coordinated policy iteration (EXCEL) algorithm which always forces agents to coordinate by comparing the agents' separated optimistic and average value functions.

52, TITLE: Robustness against Agent Failure in Hedonic Games
https://www.ijcai.org/proceedings/2019/52

AUTHORS: Ayumi Igarashi, Kazunori Ota, Yuko Sakurai, Makoto Yokoo
HIGHLIGHT: In this paper we propose a novel criterion that reshapes stability form robustness aspect.

53, TITLE: The Interplay of Emotions and Norms in Multiagent Systems
https://www.ijcai.org/proceedings/2019/53
AUTHORS: Anup K. Kalia, Nirav Ajmeri, Kevin S. Chan, Jin-Hee Cho, Sibel Adal?, Munindar P. Singh
HIGHLIGHT: We study how emotions influence norm outcomes in decision-making contexts.

54, TITLE: An Ordinal Banzhaf Index for Social Ranking
https://www.ijcai.org/proceedings/2019/54
AUTHORS: Hossein Khani, Stefano Moretti, Meltem Öztürk
HIGHLIGHT: We introduce a new method to rank single elements given an order over their sets.

55, TITLE: Multigoal Committee Selection
https://www.ijcai.org/proceedings/2019/55
AUTHORS: Maciej Kocot, Anna Kolonko, Edith Elkind, Piotr Faliszewski, Nimrod Talmon
HIGHLIGHT: We study the problem of computing committees that perform well according to several different criteria, which are expressed as committee scoring rules.

56, TITLE: Neural Networks for Predicting Human Interactions in Repeated Games
https://www.ijcai.org/proceedings/2019/56
AUTHORS: Yoav Kolumbus, Gali Noti
HIGHLIGHT: We consider the problem of predicting human players' actions in repeated strategic interactions.

57, TITLE: Almost Envy-Freeness in Group Resource Allocation
https://www.ijcai.org/proceedings/2019/57
AUTHORS: Maria Kyropoulou, Warut Suksompong, Alexandros A. Voudouris
HIGHLIGHT: We study the problem of fairly allocating indivisible goods between groups of agents using the recently introduced relaxations of envy-freeness.

58, TITLE: A Quantitative Analysis of Multi-Winner Rules
https://www.ijcai.org/proceedings/2019/58
AUTHORS: Martin Lackner, Piotr Skowron
HIGHLIGHT: We provide a quantitative analysis using methods from the theory of approximation algorithms and estimate how well multi-winner rules approximate two extreme objectives: diversity as captured by the Approval Chamberlin--Courant rule and individual excellence as captured by Multi-winner Approval Voting.

59, TITLE: Correlating Preferences and Attributes: Nearly Single-Crossing Profiles
https://www.ijcai.org/proceedings/2019/59
AUTHORS: Foram Lakhani, Dominik Peters, Edith Elkind
HIGHLIGHT: The goal of this paper is to evaluate the computational feasibility of this approach.

60, TITLE: Automated Negotiation with Gaussian Process-based Utility Models
https://www.ijcai.org/proceedings/2019/60
AUTHORS: Haralambie Leahu, Michael Kaisers, Tim Baarslag
HIGHLIGHT: We introduce a stochastic, inverse-ranking utility model compatible with the Gaussian Process preference learning framework and integrate it into a (belief) Markov Decision Process paradigm which formalizes automated negotiation processes with incomplete information.

61, TITLE: Temporal Information Design in Contests
https://www.ijcai.org/proceedings/2019/61
AUTHORS: Priel Levy, David Sarne, Yonatan Aumann
HIGHLIGHT: We study temporal information design in contests, wherein the organizer may, possibly incrementally, disclose information about the participation and performance of some contestants to other (later) contestants.

62, TITLE: Diffusion and Auction on Graphs
https://www.ijcai.org/proceedings/2019/62
AUTHORS: Bin Li, Dong Hao, Dengji Zhao, Makoto Yokoo
HIGHLIGHT: For the first time, we expand the domain of the classic auction to a social graph and formally identify a new class of auction mechanisms on graphs.

63, TITLE: Improved Heuristics for Multi-Agent Path Finding with Conflict-Based Search
https://www.ijcai.org/proceedings/2019/63
AUTHORS: Jiaoyang Li, Ariel Felner, Eli Boyarski, Hang Ma, Sven Koenig
HIGHLIGHT: In this work, we prove the limitation of this heuristic, as it is based on cardinal conflicts only.

64, TITLE: Integrating Decision Sharing with Prediction in Decentralized Planning for Multi-Agent Coordination under Uncertainty
https://www.ijcai.org/proceedings/2019/64
AUTHORS: Minglong Li, Wenjing Yang, Zhongxuan Cai, Shaowu Yang, Ji Wang
HIGHLIGHT: In this paper, we propose an approach for improving the sharing utilization by integrating information sharing with prediction in decentralized planning.

65, TITLE: Value Function Transfer for Deep Multi-Agent Reinforcement Learning Based on N-Step Returns
https://www.ijcai.org/proceedings/2019/65
AUTHORS: Yong Liu, Yujing Hu, Yang Gao, Yingfeng Chen, Changjie Fan
HIGHLIGHT: In this work, we propose more scalable transfer learning methods based on a novel MDP similarity concept.

66, TITLE: Computing Approximate Equilibria in Sequential Adversarial Games by Exploitability Descent
https://www.ijcai.org/proceedings/2019/66
AUTHORS: Edward Lockhart, Marc Lanctot, Julien Pérolat, Jean-Baptiste Lespiau, Dustin Morrill, Finbarr TImbers, Karl Tuyls
HIGHLIGHT: In this paper, we present exploitability descent, a new algorithm to compute approximate equilibria in two-player zero-sum extensive-form games with imperfect information, by direct policy optimization against worst-case opponents.

67, TITLE: Computational Aspects of Equilibria in Discrete Preference Games
https://www.ijcai.org/proceedings/2019/67
AUTHORS: Phani Raj Lolakapuri, Umang Bhaskar, Ramasuri Narayanam, Gyana R Parija, Pankaj S Dayama
HIGHLIGHT: We study the complexity of equilibrium computation in discrete preference games.

68, TITLE: Multi-Robot Planning Under Uncertain Travel Times and Safety Constraints
https://www.ijcai.org/proceedings/2019/68
AUTHORS: Masoumeh Mansouri, Bruno Lacerda, Nick Hawes, Federico Pecora
HIGHLIGHT: We present a novel modelling and planning approach for multi-robot systems under uncertain travel times.

69, TITLE: Leadership in Congestion Games: Multiple User Classes and Non-Singleton Actions
https://www.ijcai.org/proceedings/2019/69
AUTHORS: Alberto Marchesi, Matteo Castiglioni, Nicola Gatti
HIGHLIGHT: In this paper, we extend the state of the art along two main directions.

70, TITLE: Graphical One-Sided Markets
https://www.ijcai.org/proceedings/2019/70
AUTHORS: Sagar Massand, Sunil Simon
HIGHLIGHT: We study the problem of allocating indivisible objects to a set of rational agents where each agent's final utility depends on the intrinsic valuation of the allocated item as well as the allocation within the agent's local neighbourhood.

71, TITLE: Reachability Games in Dynamic Epistemic Logic
https://www.ijcai.org/proceedings/2019/71
AUTHORS: Bastien Maubert, Sophie Pinchinat, François Schwarzentruber
HIGHLIGHT: We study the problem of existence of a strategy for the controller, which generalises the classic epistemic planning problem, and we solve it for several types of actions such as public announcements and public actions.

72, TITLE: FaRM: Fair Reward Mechanism for Information Aggregation in Spontaneous Localized Settings
https://www.ijcai.org/proceedings/2019/72
AUTHORS: Moin Hussain Moti, Dimitris Chatzopoulos, Pan Hui, Sujit Gujar
HIGHLIGHT: In this work, we introduce selective and cumulative fairness.

73, TITLE: Learning Swarm Behaviors using Grammatical Evolution and Behavior Trees
https://www.ijcai.org/proceedings/2019/73

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AUTHORS: Aadesh Neupane, Michael Goodrich
HIGHLIGHT: This paper introduces an algorithm that evolves problem-specific swarm behaviors by combining multi-agent grammatical evolution and Behavior Trees (BTs).

74, TITLE: A Probabilistic Logic for Resource-Bounded Multi-Agent Systems
https://www.ijcai.org/proceedings/2019/74
AUTHORS: Hoang Nga Nguyen, Abdur Rakib
HIGHLIGHT: In this paper, we propose a logic for reasoning about coalitional power under resource constraints in the probabilistic setting.

75, TITLE: Imitative Attacker Deception in Stackelberg Security Games
https://www.ijcai.org/proceedings/2019/75
AUTHORS: Thanh Nguyen, Haifeng Xu
HIGHLIGHT: We provide a clean characterization about the game equilibrium as well as optimal algorithms to compute the equilibrium.

76, TITLE: Priority Inheritance with Backtracking for Iterative Multi-agent Path Finding
https://www.ijcai.org/proceedings/2019/76
AUTHORS: Keisuke Okumura, Manao Machida, Xavier Défago, Yasumasa Tamura
HIGHLIGHT: We present here a novel approach to iterative MAPF, that we call Priority Inheritance with Backtracking (PIBT).

77, TITLE: Approval-Based Elections and Distortion of Voting Rules
https://www.ijcai.org/proceedings/2019/77
AUTHORS: Grzegorz Pierczy?ski, Piotr Skowron
HIGHLIGHT: We consider elections where both voters and candidates can be associated with points in a metric space and voters prefer candidates that are closer to those that are farther away.

78, TITLE: Ad Hoc Teamwork With Behavior Switching Agents
https://www.ijcai.org/proceedings/2019/78
AUTHORS: Manish Ravula, Shani Alkoby, Peter Stone
HIGHLIGHT: In this work, we relax this assumption and investigate settings in which teammates can change their types during the course of the task.

79, TITLE: Ridesharing with Driver Location Preferences
https://www.ijcai.org/proceedings/2019/79
AUTHORS: Duncan Rheingans-Yoo, Scott Duke Kominers, Hongyao Ma, David C. Parkes
HIGHLIGHT: We study revenue-optimal pricing and driver compensation in ridesharing platforms when drivers have heterogeneous preferences over locations.

80, TITLE: Multi-Population Congestion Games With Incomplete Information
https://www.ijcai.org/proceedings/2019/80
AUTHORS: Charlotte Roman, Paolo Turrini
HIGHLIGHT: Here we study traffic networks with multiple origin-destination pairs, relaxing the simplifying assumption of agents having complete knowledge of the network structure.

81, TITLE: Sybil-Resilient Reality-Aware Social Choice
https://www.ijcai.org/proceedings/2019/81
AUTHORS: Gal Shahaf, Ehud Shapiro, Nimrod Talmon
HIGHLIGHT: Thus, our goal here is to enhance social choice theory with effective group decision mechanisms for communities with bounded sybil penetration.

82, TITLE: Preferences Single-Peaked on a Tree: Sampling and Tree Recognition
https://www.ijcai.org/proceedings/2019/82
AUTHORS: Jakub Sliwinski, Edith Elkind
HIGHLIGHT: We consider the setting where voters' preferences are independently sampled from rankings that are single-peaked on a given tree, and study the problem of reliably identifying the tree that generated the observed votes.

83, TITLE: Model-Free Model Reconciliation
https://www.ijcai.org/proceedings/2019/83

AUTHORS: Sarath Sreedharan, Alberto Olmo Hernandez, Aditya Prasad Mishra, Subbarao Kambhampati
HIGHLIGHT: Our goal in this paper is to adapt the model reconciliation approach to a more general planning paradigm and discuss how such methods could be used when user models are no longer explicitly available.

84, TITLE: Aggregating Incomplete Pairwise Preferences by Weight
https://www.ijcai.org/proceedings/2019/84
AUTHORS: Zoi Terzopoulou, Ulle Endriss
HIGHLIGHT: We develop a model for the aggregation of preferences that do not need to be either complete or transitive.

85, TITLE: A Regularized Opponent Model with Maximum Entropy Objective
https://www.ijcai.org/proceedings/2019/85
AUTHORS: Zheng Tian, Ying Wen, Zhichen Gong, Faiz Punakkath, Shihao Zou, Jun Wang
HIGHLIGHT: In this paper, we redefine the binary random variable o in multi-agent setting and formalize multi-agent reinforcement learning (MARL) as probabilistic inference.

86, TITLE: Exploring the Task Cooperation in Multi-goal Visual Navigation
https://www.ijcai.org/proceedings/2019/86
AUTHORS: Yuechen Wu, Zhenhuan Rao, Wei Zhang, Shijian Lu, Weizhi Lu, Zheng-Jun Zha
HIGHLIGHT: In this work, we present a model-embedded actor-critic architecture for the multi-goal visual navigation task.

87, TITLE: On Strategyproof Conference Peer Review
https://www.ijcai.org/proceedings/2019/87
AUTHORS: Yichong Xu, Han Zhao, Xiaofei Shi, Nihar B. Shah
HIGHLIGHT: In this work, we address this problem through the lens of social choice, and present a theoretical framework for strategyproof and efficient peer review.

88, TITLE: Towards Efficient Detection and Optimal Response against Sophisticated Opponents
https://www.ijcai.org/proceedings/2019/88
AUTHORS: Tianpei Yang, Jianye Hao, Zhaopeng Meng, Chongjie Zhang, Yan Zheng, Ze Zheng
HIGHLIGHT: This paper proposes a novel approach called Bayes-ToMoP which can efficiently detect the strategy of opponents using either stationary or higher-level reasoning strategies.

89, TITLE: Large-Scale Home Energy Management Using Entropy-Based Collective Multiagent Deep Reinforcement Learning Framework
https://www.ijcai.org/proceedings/2019/89
AUTHORS: Yaodong Yang, Jianye Hao, Yan Zheng, Chao Yu
HIGHLIGHT: In this paper, we focus on a microgrid scenario in which modern homes interact together under a large-scale setting to better optimize their electricity cost.

90, TITLE: Complexity of Manipulating and Controlling Approval-Based Multiwinner Voting
https://www.ijcai.org/proceedings/2019/90
AUTHORS: Yongjie Yang
HIGHLIGHT: We study the complexity of several manipulation and control problems for six prevalent approval based multiwinner voting rules.

91, TITLE: On the Tree Representations of Dichotomous Preferences
https://www.ijcai.org/proceedings/2019/91
AUTHORS: Yongjie Yang
HIGHLIGHT: We study numerous restricted domains of dichotomous preferences with respect to some tree structures.

92, TITLE: The Price of Governance: A Middle Ground Solution to Coordination in Organizational Control
https://www.ijcai.org/proceedings/2019/92
AUTHORS: Chao Yu, Guozhen Tan
HIGHLIGHT: This paper investigates a middle ground solution between decentralized interactions and centralized administrations for coordinating agents beyond inefficient behavior.

93, TITLE: Decentralized Optimization with Edge Sampling
https://www.ijcai.org/proceedings/2019/93
AUTHORS: Chi Zhang, Qianxiao Li, Peilin Zhao

HIGHLIGHT: In this paper, we propose a decentralized distributed algorithm with stochastic communication among nodes, building on a sampling method called "edge sampling".

94, TITLE: Explore Truthful Incentives for Tasks with Heterogenous Levels of Difficulty in the Sharing Economy
https://www.ijcai.org/proceedings/2019/94
AUTHORS: Pengzhan Zhou, Xin Wei, Cong Wang, Yuanyuan Yang
HIGHLIGHT: In this paper, we investigate this general problem by considering a system with k levels of difficulty.

95, TITLE: CoSegNet: Image Co-segmentation using a Conditional Siamese Convolutional Network
https://www.ijcai.org/proceedings/2019/95
AUTHORS: Sayan Banerjee, Avik Hati, Subhasis Chaudhuri, Rajbabu Velmurugan
HIGHLIGHT: In this paper, we propose a novel deep convolution neural network based end-to-end co-segmentation model.

96, TITLE: Multi-Margin based Decorrelation Learning for Heterogeneous Face Recognition
https://www.ijcai.org/proceedings/2019/96
AUTHORS: Bing Cao, Nannan Wang, Xinbo Gao, Jie Li, Zhifeng Li
HIGHLIGHT: This paper presents a deep neural network approach namely Multi-Margin based Decorrelation Learning (MMDL) to extract decorrelation representations in a hyperspherical space for cross-domain face images.

97, TITLE: Generalized Zero-Shot Vehicle Detection in Remote Sensing Imagery via Coarse-to-Fine Framework
https://www.ijcai.org/proceedings/2019/97
AUTHORS: Hong Chen, Yongtan Luo, Liujuan Cao, Baochang Zhang, Guodong Guo, Cheng Wang, Jonathan Li, Rongrong Ji
HIGHLIGHT: In this paper, we introduce a novel coarse-to-fine framework, which decomposes vehicle detection into segmentation-based vehicle localization and generalized zero-shot vehicle classification.
To the best of our knowledge, there is no publically available dataset to test comparative methods, we therefore construct a new dataset to fill this gap of evaluation.

98, TITLE: Structure-Aware Residual Pyramid Network for Monocular Depth Estimation
https://www.ijcai.org/proceedings/2019/98
AUTHORS: Xiaotian Chen, Xuejin Chen, Zheng-Jun Zha
HIGHLIGHT: In this paper, we propose a Structure-Aware Residual Pyramid Network (SARPN) to exploit multi-scale structures for accurate depth prediction.

99, TITLE: A Deep Bi-directional Attention Network for Human Motion Recovery
https://www.ijcai.org/proceedings/2019/99
AUTHORS: Qiongjie Cui, Huaijiang Sun, Yupeng Li, Yue Kong
HIGHLIGHT: To address these issues, we propose a deep bi-directional attention network (BAN) which can not only capture the long-term dependencies but also adaptively extract relevant information at each time step.

100, TITLE: On Retrospecting Human Dynamics with Attention
https://www.ijcai.org/proceedings/2019/100
AUTHORS: Minjing Dong, Chang Xu
HIGHLIGHT: To address these challenges, we propose to retrospect human dynamics with attention.

101, TITLE: Learning to Draw Text in Natural Images with Conditional Adversarial Networks
https://www.ijcai.org/proceedings/2019/101
AUTHORS: Shancheng Fang, Hongtao Xie, Jianjun Chen, Jianlong Tan, Yongdong Zhang
HIGHLIGHT: In this work, we propose an entirely learning-based method to automatically synthesize text sequence in natural images leveraging conditional adversarial networks.

102, TITLE: Beyond Product Quantization: Deep Progressive Quantization for Image Retrieval
https://www.ijcai.org/proceedings/2019/102
AUTHORS: Lianli Gao, Xiaosu Zhu, Jingkuan Song, Zhou Zhao, Heng Tao Shen
HIGHLIGHT: In this work, we propose a deep progressive quantization (DPQ) model, as an alternative to PQ, for large scale image retrieval.

103, TITLE: ANODE: Unconditionally Accurate Memory-Efficient Gradients for Neural ODEs
https://www.ijcai.org/proceedings/2019/103
AUTHORS: Amir Gholaminejad, Kurt Keutzer, George Biros

HIGHLIGHT: We discuss the underlying problems, and to address them we propose ANODE, a neural ODE framework which avoids the numerical instability related problems noted above.

104, TITLE: Asynchronous Stochastic Frank-Wolfe Algorithms for Non-Convex Optimization
https://www.ijcai.org/proceedings/2019/104
AUTHORS: Bin Gu, Wenhan Xian, Heng Huang
HIGHLIGHT: To address this challenging problem, in this paper, we propose our asynchronous stochastic Frank-Wolfe algorithm (AsySFW) and its variance reduction version (AsySVFW) for solving the constrained non-convex optimization problems.

105, TITLE: Dense Temporal Convolution Network for Sign Language Translation
https://www.ijcai.org/proceedings/2019/105
AUTHORS: Dan Guo, Shuo Wang, Qi Tian, Meng Wang
HIGHLIGHT: To align the sign language actions and translate them into the respective words automatically, this paper proposes a dense temporal convolution network, termed DenseTCN which captures the actions in hierarchical views.

106, TITLE: Connectionist Temporal Modeling of Video and Language: a Joint Model for Translation and Sign Labeling
https://www.ijcai.org/proceedings/2019/106
AUTHORS: Dan Guo, Shengeng Tang, Meng Wang
HIGHLIGHT: This paper proposes a Connectionist Temporal Modeling (CTM) network for sentence translation and sign labeling.

107, TITLE: 3DViewGraph: Learning Global Features for 3D Shapes from A Graph of Unordered Views with Attention
https://www.ijcai.org/proceedings/2019/107
AUTHORS: Zhizhong Han, Xiyang Wang, Chi Man Vong, Yu-Shen Liu, Matthias Zwicker, C. L. Philip Chen
HIGHLIGHT: We propose 3DViewGraph to resolve this issue, which learns 3D global features by more effectively aggregating unordered views with attention.

108, TITLE: Parts4Feature: Learning 3D Global Features from Generally Semantic Parts in Multiple Views
https://www.ijcai.org/proceedings/2019/108
AUTHORS: Zhizhong Han, Xinhai Liu, Yu-Shen Liu, Matthias Zwicker
HIGHLIGHT: In contrast, we propose a deep neural network, called Parts4Feature, to learn 3D global features from part-level information in multiple views.

109, TITLE: MAT-Net: Medial Axis Transform Network for 3D Object Recognition
https://www.ijcai.org/proceedings/2019/109
AUTHORS: Jianwei Hu, Bin Wang, Lihui Qian, Yiling Pan, Xiaohu Guo, Lingjie Liu, Wenping Wang
HIGHLIGHT: In this work, we present MAT-Net, a neural network which captures local and global features from the Medial Axis Transform (MAT).

110, TITLE: Dynamic Feature Fusion for Semantic Edge Detection
https://www.ijcai.org/proceedings/2019/110
AUTHORS: Yuan Hu, Yunpeng Chen, Xiang Li, Jiashi Feng
HIGHLIGHT: In this work, we propose a novel dynamic feature fusion strategy that assigns different fusion weights for different input images and locations adaptively.

111, TITLE: Multi-Level Visual-Semantic Alignments with Relation-Wise Dual Attention Network for Image and Text Matching
https://www.ijcai.org/proceedings/2019/111
AUTHORS: Zhibin Hu, Yongsheng Luo, Jiong Lin, Yan Yan, Jian Chen
HIGHLIGHT: In this paper, we propose a relation-wise dual attention network (RDAN) for image-text matching.

112, TITLE: Learning Unsupervised Visual Grounding Through Semantic Self-Supervision
https://www.ijcai.org/proceedings/2019/112
AUTHORS: Syed Ashar Javed, Shreyas Saxena, Vineet Gandhi
HIGHLIGHT: In this paper, we propose a novel framework for unsupervised visual grounding which uses concept learning as a proxy task to obtain self-supervision.

113, TITLE: Supervised Set-to-Set Hashing in Visual Recognition
https://www.ijcai.org/proceedings/2019/113

AUTHORS: I-Hong Jhuo
HIGHLIGHT: In this paper, we consider the fundamental problem of finding a nearest set from a collection of sets, to a query set.

114, TITLE: Generative Image Inpainting with Submanifold Alignment
https://www.ijcai.org/proceedings/2019/114
AUTHORS: Ang Li, Jianzhong Qi, Rui Zhang, Xingjun Ma, Kotagiri Ramamohanarao
HIGHLIGHT: To address this limitation, we propose to enforce the alignment (or closeness) between the local data submanifolds (subspaces) around restored images and those around the original (uncorrupted) images during the learning process of GAN-based inpainting models.

115, TITLE: Detecting Robust Co-Saliency with Recurrent Co-Attention Neural Network
https://www.ijcai.org/proceedings/2019/115
AUTHORS: Bo Li, Zhengxing Sun, Lv Tang, Yunhan Sun, Jinlong Shi
HIGHLIGHT: This paper proposes a novel deep learning co-saliency detection approach which simultaneously learns single image properties and robust group feature in a recurrent manner.

116, TITLE: Variation Generalized Feature Learning via Intra-view Variation Adaptation
https://www.ijcai.org/proceedings/2019/116
AUTHORS: Jiawei Li, Mang Ye, Andy Jinhua Ma, Pong C Yuen
HIGHLIGHT: In this paper, we propose a Variation Generalized Feature Learning (VGFL) method to learn adaptable feature representation with intra-view positives.

117, TITLE: Pedestrian Attribute Recognition by Joint Visual-semantic Reasoning and Knowledge Distillation
https://www.ijcai.org/proceedings/2019/117
AUTHORS: Qiaozhe Li, Xin Zhao, Ran He, Kaiqi Huang
HIGHLIGHT: To achieve effective recognition, this paper presents a graph-based global reasoning framework to jointly model potential visual-semantic relations of attributes and distill auxiliary human parsing knowledge to guide the relational learning.

118, TITLE: Rethinking Loss Design for Large-scale 3D Shape Retrieval
https://www.ijcai.org/proceedings/2019/118
AUTHORS: Zhaoqun Li, Cheng Xu, Biao Leng
HIGHLIGHT: In this paper, we propose the Collaborative Inner Product Loss (CIP Loss) to obtain ideal shape embedding that discriminative among different categories and clustered within the same class.

119, TITLE: Attribute-Aware Convolutional Neural Networks for Facial Beauty Prediction
https://www.ijcai.org/proceedings/2019/119
AUTHORS: Luojun Lin, Lingyu Liang, Lianwen Jin, Weijie Chen
HIGHLIGHT: To address this problem, we propose an Attribute-aware Convolutional Neural Network (AaNet) that modulates the filters of the main network, adaptively, using parameter generators that take beauty-related attributes as extra inputs.

120, TITLE: Rectified Binary Convolutional Networks for Enhancing the Performance of 1-bit DCNNs
https://www.ijcai.org/proceedings/2019/120
AUTHORS: Chunlei Liu, Wenrui Ding, Xin Xia, Yuan Hu, Baochang Zhang, Jianzhuang Liu, Bohan Zhuang, Guodong Guo
HIGHLIGHT: In this paper, we propose rectified binary convolutional networks (RBCNs), towards optimized BCNNs, by combining full-precision kernels and feature maps to rectify the binarization process in a unified framework.

121, TITLE: Nuclei Segmentation via a Deep Panoptic Model with Semantic Feature Fusion
https://www.ijcai.org/proceedings/2019/121
AUTHORS: Dongnan Liu, Donghao Zhang, Yang Song, Chaoyi Zhang, Fan Zhang, Lauren O'Donnell, Weidong Cai
HIGHLIGHT: In this work, we propose a panoptic segmentation model which incorporates an auxiliary semantic segmentation branch with the instance branch to integrate global and local features.

122, TITLE: Densely Connected Attention Flow for Visual Question Answering
https://www.ijcai.org/proceedings/2019/122
AUTHORS: Fei Liu, Jing Liu, Zhiwei Fang, Richang Hong, Hanqing Lu
HIGHLIGHT: Therefore, in this paper, we propose a novel DCAF (Densely Connected Attention Flow) framework for modeling dense interactions.

123, TITLE: Unsupervised Learning of Scene Flow Estimation Fusing with Local Rigidity

https://www.ijcai.org/proceedings/2019/123
AUTHORS:	Liang Liu, Guangyao Zhai, Wenlong Ye, Yong Liu
HIGHLIGHT:	In this work, we present a unified framework for joint unsupervised learning of stereo depth and optical flow with explicit local rigidity to estimate scene flow.

124, TITLE:	Resolution-invariant Person Re-Identification
https://www.ijcai.org/proceedings/2019/124
AUTHORS:	Shunan Mao, Shiliang Zhang, Ming Yang
HIGHLIGHT:	This paper learns person representations robust to resolution variance through jointly training a Foreground-Focus Super-Resolution (FFSR) module and a Resolution-Invariant Feature Extractor (RIFE) by end-to-end CNN learning.

125, TITLE:	Low Shot Box Correction for Weakly Supervised Object Detection
https://www.ijcai.org/proceedings/2019/125
AUTHORS:	Tianxiang Pan, Bin Wang, Guiguang Ding, Jungong Han, Junhai Yong
HIGHLIGHT:	To solve this problem, we define a low-shot weakly supervised object detection task and propose a novel low-shot box correction network to address it.

126, TITLE:	DBDNet: Learning Bi-directional Dynamics for Early Action Prediction
https://www.ijcai.org/proceedings/2019/126
AUTHORS:	Guoliang Pang, Xionghui Wang, Jian-Fang Hu, Qing Zhang, Wei-Shi Zheng
HIGHLIGHT:	To obtain a reliable future estimation, a novel encoder-decoder architecture is proposed for integrating the tasks of synthesizing future motions from observed videos and reconstructing observed motions from synthesized future motions in an unified framework, which can capture the bi-directional dynamics depicted in partial videos along the temporal (past-to-future) direction and reverse chronological (future-back-to-past) direction.

127, TITLE:	Deep Light-field-driven Saliency Detection from a Single View
https://www.ijcai.org/proceedings/2019/127
AUTHORS:	Yongri Piao, Zhengkun Rong, Miao Zhang, Xiao Li, Huchuan Lu
HIGHLIGHT:	In this paper, we show for the first time that saliency detection problem can be reformulated as two sub-problems: light field synthesis from a single view and light-field-driven saliency detection.

128, TITLE:	Deep Recurrent Quantization for Generating Sequential Binary Codes
https://www.ijcai.org/proceedings/2019/128
AUTHORS:	Jingkuan Song, Xiaosu Zhu, Lianli Gao, Xin-Shun Xu, Wu Liu, Heng Tao Shen
HIGHLIGHT:	To address this issue, we propose a Deep Recurrent Quantization (DRQ) architecture which can generate sequential binary codes.

129, TITLE:	Talking Face Generation by Conditional Recurrent Adversarial Network
https://www.ijcai.org/proceedings/2019/129
AUTHORS:	Yang Song, Jingwen Zhu, Dawei Li, Andy Wang, Hairong Qi
HIGHLIGHT:	We propose a novel conditional recurrent generation network that incorporates both image and audio features in the recurrent unit for temporal dependency.

130, TITLE:	Hallucinating Optical Flow Features for Video Classification
https://www.ijcai.org/proceedings/2019/130
AUTHORS:	Yongyi Tang, Lin Ma, Lianqiang Zhou
HIGHLIGHT:	In this paper, we propose a motion hallucination network, namely MoNet, to imagine the optical flow features from the appearance features, with no reliance on the optical flow computation.

131, TITLE:	Color-Sensitive Person Re-Identification
https://www.ijcai.org/proceedings/2019/131
AUTHORS:	Guan'an Wang, Yang Yang, Jian Cheng, Jinqiao Wang, Zengguang Hou
HIGHLIGHT:	In this paper, we propose a novel Color-Sensitive Re-ID to take full advantage of color information.

132, TITLE:	Convolutional Auto-encoding of Sentence Topics for Image Paragraph Generation
https://www.ijcai.org/proceedings/2019/132
AUTHORS:	Jing Wang, Yingwei Pan, Ting Yao, Jinhui Tang, Tao Mei
HIGHLIGHT:	In this paper, we present a new design --- Convolutional Auto-Encoding (CAE) that purely employs convolutional and deconvolutional auto-encoding framework for topic modeling on the region-level features of an image.

133, TITLE:　　　　　DSRN: A Deep Scale Relationship Network for Scene Text Detection
https://www.ijcai.org/proceedings/2019/133
AUTHORS:　　　　　Yuxin Wang, Hongtao Xie, Zilong Fu, Yongdong Zhang
HIGHLIGHT:　　　　　To address this problem, we propose an end-to-end architecture called Deep Scale Relationship Network (DSRN) to map multi-scale convolution features onto a scale invariant space to obtain uniform activation of multi-size text instances.

134, TITLE:　　　　　Transferable Adversarial Attacks for Image and Video Object Detection
https://www.ijcai.org/proceedings/2019/134
AUTHORS:　　　　　Xingxing Wei, Siyuan Liang, Ning Chen, Xiaochun Cao
HIGHLIGHT:　　　　　To address these issues, we present a generative method to obtain adversarial images and videos, thereby significantly reducing the processing time.

135, TITLE:　　　　　Video Interactive Captioning with Human Prompts
https://www.ijcai.org/proceedings/2019/135
AUTHORS:　　　　　Aming Wu, Yahong Han, Yi Yang
HIGHLIGHT:　　　　　In this paper, we make a new attempt that, we launch a round of interaction between a human and a captioning agent.

136, TITLE:　　　　　Mutually Reinforced Spatio-Temporal Convolutional Tube for Human Action Recognition
https://www.ijcai.org/proceedings/2019/136
AUTHORS:　　　　　Haoze Wu, Jiawei Liu, Zheng-Jun Zha, Zhenzhong Chen, Xiaoyan Sun
HIGHLIGHT:　　　　　In this work, we propose a novel and efficient Mutually Reinforced Spatio-Temporal Convolutional Tube (MRST) for human action recognition.

137, TITLE:　　　　　Densely Supervised Hierarchical Policy-Value Network for Image Paragraph Generation
https://www.ijcai.org/proceedings/2019/137
AUTHORS:　　　　　Siying Wu, Zheng-Jun Zha, Zilei Wang, Houqiang Li, Feng Wu
HIGHLIGHT:　　　　　In this paper, we propose a novel Densely Supervised Hierarchical Policy-Value (DHPV) network for effective paragraph generation.

138, TITLE:　　　　　Graph Convolutional Network Hashing for Cross-Modal Retrieval
https://www.ijcai.org/proceedings/2019/138
AUTHORS:　　　　　Ruiqing Xu, Chao Li, Junchi Yan, Cheng Deng, Xianglong Liu
HIGHLIGHT:　　　　　In this paper, we propose a Graph Convolutional Hashing (GCH) approach, which learns modality-unified binary codes via an affinity graph.

139, TITLE:　　　　　MSR: Multi-Scale Shape Regression for Scene Text Detection
https://www.ijcai.org/proceedings/2019/139
AUTHORS:　　　　　Chuhui Xue, Shijian Lu, Wei Zhang
HIGHLIGHT:　　　　　This paper presents a novel multi-scale shape regression network (MSR) that is capable of locating text lines of different lengths, shapes and curvatures in scenes.

140, TITLE:　　　　　Dynamically Visual Disambiguation of Keyword-based Image Search
https://www.ijcai.org/proceedings/2019/140
AUTHORS:　　　　　Yazhou Yao, Zeren Sun, Fumin Shen, Li Liu, Limin Wang, Fan Zhu, Lizhong Ding, Gangshan Wu, Ling Shao
HIGHLIGHT:　　　　　To address this issue, we present an adaptive multi-model framework that resolves polysemy by visual disambiguation.

141, TITLE:　　　　　High Performance Gesture Recognition via Effective and Efficient Temporal Modeling
https://www.ijcai.org/proceedings/2019/141
AUTHORS:　　　　　Yang Yi, Feng Ni, Yuexin Ma, Xinge Zhu, Yuankai Qi, Riming Qiu, Shijie Zhao, Feng Li, Yongtao Wang
HIGHLIGHT:　　　　　In this paper, we focus instead on the 1D convolutional neural networks and propose a simple and efficient architectural unit, Multi-Kernel Temporal Block (MKTB), that models the multi-scale temporal responses by explicitly applying different temporal kernels.

142, TITLE:　　　　　Capturing Spatial and Temporal Patterns for Facial Landmark Tracking through Adversarial Learning
https://www.ijcai.org/proceedings/2019/142
AUTHORS:　　　　　Shi Yin, Shangfei Wang, Guozhu Peng, Xiaoping Chen, Bowen Pan
HIGHLIGHT:　　　　　In this paper, we propose a novel deep adversarial framework to explore the shape and temporal dependencies from both appearance level and target label level.

143, TITLE:	Pose-preserving Cross Spectral Face Hallucination
https://www.ijcai.org/proceedings/2019/143
AUTHORS:	Junchi Yu, Jie Cao, Yi Li, Xiaofei Jia, Ran He
HIGHLIGHT:	We present an approach to avert the data misalignment problem and faithfully preserve pose, expression and identity information during cross-spectral face hallucination.

144, TITLE:	Generative Visual Dialogue System via Weighted Likelihood Estimation
https://www.ijcai.org/proceedings/2019/144
AUTHORS:	Heming Zhang, Shalini Ghosh, Larry Heck, Stephen Walsh, Junting Zhang, Jie Zhang, C.-C. Jay Kuo
HIGHLIGHT:	To address this issue, we propose a novel training scheme in conjunction with weighted likelihood estimation method.

145, TITLE:	Binarized Neural Networks for Resource-Efficient Hashing with Minimizing Quantization Loss
https://www.ijcai.org/proceedings/2019/145
AUTHORS:	Feng Zheng, Cheng Deng, Heng Huang
HIGHLIGHT:	In order to solve the problem of memory consumption and computational requirements, this paper proposes a novel learning binary neural network framework to achieve a resource-efficient deep hashing.

146, TITLE:	LRDNN: Local-refining based Deep Neural Network for Person Re-Identification with Attribute Discerning
https://www.ijcai.org/proceedings/2019/146
AUTHORS:	Qinqin Zhou, Bineng Zhong, Xiangyuan Lan, Gan Sun, Yulun Zhang, Mengran Gou
HIGHLIGHT:	Since re-ID, pose estimation and attribute recognition are all based on the person appearance information, we propose a Local-refining based Deep Neural Network (LRDNN) to aggregate pose estimation and attribute recognition to improve the re-ID performance.

147, TITLE:	Face Photo-Sketch Synthesis via Knowledge Transfer
https://www.ijcai.org/proceedings/2019/147
AUTHORS:	Mingrui Zhu, Nannan Wang, Xinbo Gao, Jie Li, Zhifeng Li
HIGHLIGHT:	Therefore, we propose a novel knowledge transfer framework to synthesize face photos from face sketches or synthesize face sketches from face photos.

148, TITLE:	Athanor: High-Level Local Search Over Abstract Constraint Specifications in Essence
https://www.ijcai.org/proceedings/2019/148
AUTHORS:	Saad Attieh, Nguyen Dang, Christopher Jefferson, Ian Miguel, Peter Nightingale
HIGHLIGHT:	This paper presents Athanor, a novel local search solver that operates on abstract constraint specifications of combinatorial problems in the Essence language.

149, TITLE:	Constraint Programming for Mining Borders of Frequent Itemsets
https://www.ijcai.org/proceedings/2019/149
AUTHORS:	Mohamed-Bachir Belaid, Christian Bessiere, Nadjib Lazaar
HIGHLIGHT:	We propose a generic framework based on constraint programming to mine both borders of frequent itemsets.One can easily decide which border to mine by setting a simple parameter.

150, TITLE:	How to Tame Your Anticipatory Algorithm
https://www.ijcai.org/proceedings/2019/150
AUTHORS:	Allegra De Filippo, Michele Lombardi, Michela Milano
HIGHLIGHT:	Given an arbitrary anticipatory algorithm, we present three methods that allow to retain its solution quality at a fraction of the online computational cost, via a substantial degree of offline preparation.

151, TITLE:	Predict+Optimise with Ranking Objectives: Exhaustively Learning Linear Functions
https://www.ijcai.org/proceedings/2019/151
AUTHORS:	Emir Demirovic, Peter J. Stuckey, James Bailey, Jeffrey Chan, Christopher Leckie, Kotagiri Ramamohanarao, Tias Guns
HIGHLIGHT:	Our contributions are two-fold: 1) we provide theoretical insight into the properties and computational complexity of predict+optimise problems in general, and 2) develop a novel framework that, in contrast to related work, guarantees to compute the optimal parameters for a linear learning function given any ranking optimisation problem.

152, TITLE:	Privacy-Preserving Obfuscation of Critical Infrastructure Networks
https://www.ijcai.org/proceedings/2019/152
AUTHORS:	Ferdinando Fioretto, Terrence W.K. Mak, Pascal Van Hentenryck

HIGHLIGHT: The paper studies how to release data about a critical infrastructure network (e.g., a power network or a transportation network) without disclosing sensitive information that can be exploited by malevolent agents, while preserving the realism of the network.

153, TITLE: Solving the Satisfiability Problem of Modal Logic S5 Guided by Graph Coloring
https://www.ijcai.org/proceedings/2019/153
AUTHORS: Pei Huang, Minghao Liu, Ping Wang, Wenhui Zhang, Feifei Ma, Jian Zhang
HIGHLIGHT: In this paper, we present a novel SAT-based approach for S5 satisfiability problem.

154, TITLE: DoubleLex Revisited and Beyond
https://www.ijcai.org/proceedings/2019/154
AUTHORS: Xuming Huang, Jimmy Lee
HIGHLIGHT: The paper proposes Maximum Residue (MR) as a notion to evaluate the strength of a symmetry breaking method.

155, TITLE: Model-Based Diagnosis with Multiple Observations
https://www.ijcai.org/proceedings/2019/155
AUTHORS: Alexey Ignatiev, Antonio Morgado, Georg Weissenbacher, Joao Marques-Silva
HIGHLIGHT: The paper proposes not only solutions to correct existing algorithms, but also conditions for improving their run times.

156, TITLE: Enumerating Potential Maximal Cliques via SAT and ASP
https://www.ijcai.org/proceedings/2019/156
AUTHORS: Tuukka Korhonen, Jeremias Berg, Matti Järvisalo
HIGHLIGHT: We propose the use of declarative solvers for PMC enumeration as a substitute for the specialized PMC enumeration algorithms employed in current BT implementations.

157, TITLE: Entropy-Penalized Semidefinite Programming
https://www.ijcai.org/proceedings/2019/157
AUTHORS: Mikhail Krechetov, Jakub Marecek, Yury Maximov, Martin Takac
HIGHLIGHT: In this paper, we propose Entropy-Penalized Semi-Definite Programming (EP-SDP), which provides a unified framework for a broad class of penalty functions used in practice to promote a low-rank solution.

158, TITLE: Acquiring Integer Programs from Data
https://www.ijcai.org/proceedings/2019/158
AUTHORS: Mohit Kumar, Stefano Teso, Luc De Raedt
HIGHLIGHT: We propose ARNOLD, an approach that partially automates the modelling step by learning an integer program from example solutions.

159, TITLE: Stochastic Constraint Propagation for Mining Probabilistic Networks
https://www.ijcai.org/proceedings/2019/159
AUTHORS: Anna Louise D. Latour, Behrouz Babaki, Siegfried Nijssen
HIGHLIGHT: For the specific case of monotonic distributions, we propose an alternative method: a new propagator for a global OBDD-based constraint.

160, TITLE: Optimizing Constraint Solving via Dynamic Programming
https://www.ijcai.org/proceedings/2019/160
AUTHORS: Shu Lin, Na Meng, Wenxin Li
HIGHLIGHT: In this paper we present a different approach--DPSolver--which uses dynamic programming (DP) to efficiently solve certain types of constraint optimization problems (COPs).

161, TITLE: Constraint-Based Scheduling with Complex Setup Operations: An Iterative Two-Layer Approach
https://www.ijcai.org/proceedings/2019/161
AUTHORS: Adriana Pacheco, Cédric Pralet, Stéphanie Roussel
HIGHLIGHT: In this paper, we consider scheduling problems involving resources that must perform complex setup operations between the tasks they realize.

162, TITLE: Phase Transition Behavior of Cardinality and XOR Constraints
https://www.ijcai.org/proceedings/2019/162
AUTHORS: Yash Pote, Saurabh Joshi, Kuldeep S. Meel

HIGHLIGHT:	In this paper, we present the first rigorous empirical study to characterize the runtime behavior of 1-CARD-XOR formulas.

163, TITLE:	GANAK: A Scalable Probabilistic Exact Model Counter
https://www.ijcai.org/proceedings/2019/163
AUTHORS:	Shubham Sharma, Subhajit Roy, Mate Soos, Kuldeep S. Meel
HIGHLIGHT:	In this paper, we revisit the architecture of the state-of-the-art dynamic decomposition-based #SAT tool, sharpSAT, and demonstrate that by introducing a new notion of probabilistic component caching and the usage of universal hashing for exact model counting along with the development of several new heuristics can lead to significant performance improvement over state-of-the-art model-counters.

164, TITLE:	Unifying Search-based and Compilation-based Approaches to Multi-agent Path Finding through Satisfiability Modulo Theories
https://www.ijcai.org/proceedings/2019/164
AUTHORS:	Pavel Surynek
HIGHLIGHT:	Our novel algorithm called SMT-CBS hence does not branch at the high-level but incrementally extends the propositional model.

165, TITLE:	Integrating Pseudo-Boolean Constraint Reasoning in Multi-Objective Evolutionary Algorithms
https://www.ijcai.org/proceedings/2019/165
AUTHORS:	Miguel Terra-Neves, Inês Lynce, Vasco Manquinho
HIGHLIGHT:	In this paper, we propose the integration of constraint-based procedures in evolutionary algorithms for solving MOCO.

166, TITLE:	Resolution and Domination: An Improved Exact MaxSAT Algorithm
https://www.ijcai.org/proceedings/2019/166
AUTHORS:	Chao Xu, Wenjun Li, Yongjie Yang, Jianer Chen, Jianxin Wang
HIGHLIGHT:	Particularly, we derive a branching algorithm of running time $O^*(1.2989^m)$ for the MaxSAT problem, where m denotes the number of clauses in the given CNF formula.

167, TITLE:	Path Planning with CPD Heuristics
https://www.ijcai.org/proceedings/2019/167
AUTHORS:	Massimo Bono, Alfonso E. Gerevini, Daniel D. Harabor, Peter J. Stuckey
HIGHLIGHT:	In this work we investigate CPDs as admissible heuristic functions and we apply them in two distinct settings: problems where the graph is subject to dynamically changing costs, and anytime settings where deliberation time is limited.

168, TITLE:	A*+IDA*: A Simple Hybrid Search Algorithm
https://www.ijcai.org/proceedings/2019/168
AUTHORS:	Zhaoxing Bu, Richard E. Korf
HIGHLIGHT:	We present a simple combination of A* and IDA*, which we call A*+IDA*.

169, TITLE:	Deanonymizing Social Networks Using Structural Information
https://www.ijcai.org/proceedings/2019/169
AUTHORS:	Ioannis Caragiannis, Evanthia Tsitsoka
HIGHLIGHT:	We present two algorithms that attack the problem by exploiting only the structure of the two graphs.

170, TITLE:	Conditions for Avoiding Node Re-expansions in Bounded Suboptimal Search
https://www.ijcai.org/proceedings/2019/170
AUTHORS:	Jingwei Chen, Nathan R. Sturtevant
HIGHLIGHT:	This paper explores the properties of priority functions that can find bounded suboptimal solution without requiring node re-expansions.

171, TITLE:	An Efficient Evolutionary Algorithm for Minimum Cost Submodular Cover
https://www.ijcai.org/proceedings/2019/171
AUTHORS:	Victoria G. Crawford
HIGHLIGHT:	In this paper, the Minimum Cost Submodular Cover problem is studied, which is to minimize a modular cost function such that the monotone submodular benefit function is above a threshold.

172, TITLE:	An Evolution Strategy with Progressive Episode Lengths for Playing Games
https://www.ijcai.org/proceedings/2019/172

AUTHORS: Lior Fuks, Noor Awad, Frank Hutter, Marius Lindauer
HIGHLIGHT: In this work, we introduce Progressive Episode Lengths (PEL) as a new technique and incorporate it with ES.

173, TITLE: Regarding Jump Point Search and Subgoal Graphs
https://www.ijcai.org/proceedings/2019/173
AUTHORS: Daniel D. Harabor, Tansel Uras, Peter J. Stuckey, Sven Koenig
HIGHLIGHT: In this paper, we define Jump Point Graphs (JP), a preprocessing-based path-planning technique similar to Subgoal Graphs (SG).

174, TITLE: Iterative Budgeted Exponential Search
https://www.ijcai.org/proceedings/2019/174
AUTHORS: Malte Helmert, Tor Lattimore, Levi H. S. Lelis, Laurent Orseau, Nathan R. Sturtevant
HIGHLIGHT: We describe a new algorithmic framework that iteratively controls an expansion budget and solution cost limit, giving rise to new graph and tree search algorithms for which the number of expansions is $O(n \log C^*)$, where C^* is the optimal solution cost.

175, TITLE: Direction-Optimizing Breadth-First Search with External Memory Storage
https://www.ijcai.org/proceedings/2019/175
AUTHORS: Shuli Hu, Nathan R. Sturtevant
HIGHLIGHT: This paper shows how to modify direction-optimizing breadth-first search to build external-memory heuristics.

176, TITLE: DeltaDou: Expert-level Doudizhu AI through Self-play
https://www.ijcai.org/proceedings/2019/176
AUTHORS: Qiqi Jiang, Kuangzheng Li, Boyao Du, Hao Chen, Hai Fang
HIGHLIGHT: In this paper, we present a Doudizhu AI by applying deep reinforcement learning from games of self-play.

177, TITLE: Graph Mining Meets Crowdsourcing: Extracting Experts for Answer Aggregation
https://www.ijcai.org/proceedings/2019/177
AUTHORS: Yasushi Kawase, Yuko Kuroki, Atsushi Miyauchi
HIGHLIGHT: In this study, we introduce the notion of "expert core", which is a set of workers that is very unlikely to contain a non-expert.

178, TITLE: Depth-First Memory-Limited AND/OR Search and Unsolvability in Cyclic Search Spaces
https://www.ijcai.org/proceedings/2019/178
AUTHORS: Akihiro Kishimoto, Adi Botea, Radu Marinescu
HIGHLIGHT: We give a new theoretical analysis under relaxed assumptions where previous results no longer hold.

179, TITLE: Branch-and-Cut-and-Price for Multi-Agent Pathfinding
https://www.ijcai.org/proceedings/2019/179
AUTHORS: Edward Lam, Pierre Le Bodic, Daniel D. Harabor, Peter J. Stuckey
HIGHLIGHT: In this work, we present an optimal algorithm, BCP, that hybridizes both approaches using Branch-and-Cut-and-Price, a decomposition framework developed for mathematical optimization.

180, TITLE: Local Search with Efficient Automatic Configuration for Minimum Vertex Cover
https://www.ijcai.org/proceedings/2019/180
AUTHORS: Chuan Luo, Holger H. Hoos, Shaowei Cai, Qingwei Lin, Hongyu Zhang, Dongmei Zhang
HIGHLIGHT: In this work, we present a new local search framework for MinVC called MetaVC, which is highly parametric and incorporates many effective local search techniques.

181, TITLE: Learning Deep Decentralized Policy Network by Collective Rewards for Real-Time Combat Game
https://www.ijcai.org/proceedings/2019/181
AUTHORS: Peixi Peng, Junliang Xing, Lili Cao, Lisen Mu, Chang Huang
HIGHLIGHT: To train DDPN effectively, a novel two-stage learning algorithm is proposed which combines imitation learning from opponent and reinforcement learning by no-regret dynamics.

182, TITLE: Heuristic Search for Homology Localization Problem and Its Application in Cardiac Trabeculae Reconstruction
https://www.ijcai.org/proceedings/2019/182
AUTHORS: Xudong Zhang, Pengxiang Wu, Changhe Yuan, Yusu Wang, Dimitris Metaxas, Chao Chen
HIGHLIGHT: In this work, we formulate the problem as a heuristic search problem, and propose novel heuristic functions based on advanced topological techniques.

183, TITLE: Non-smooth Optimization over Stiefel Manifolds with Applications to Dimensionality Reduction and Graph Clustering
https://www.ijcai.org/proceedings/2019/183
AUTHORS: Fariba Zohrizadeh, Mohsen Kheirandishfard, Farhad Kamangar, Ramtin Madani
HIGHLIGHT: This paper is concerned with the class of non-convex optimization problems with orthogonality constraints.

184, TITLE: Explaining Reinforcement Learning to Mere Mortals: An Empirical Study
https://www.ijcai.org/proceedings/2019/184
AUTHORS: Andrew Anderson, Jonathan Dodge, Amrita Sadarangani, Zoe Juozapaitis, Evan Newman, Jed Irvine, Souti Chattopadhyay, Alan Fern, Margaret Burnett
HIGHLIGHT: We present a user study to investigate the impact of explanations on non-experts?

185, TITLE: Balancing Explicability and Explanations in Human-Aware Planning
https://www.ijcai.org/proceedings/2019/185
AUTHORS: Tathagata Chakraborti, Sarath Sreedharan, Subbarao Kambhampati
HIGHLIGHT: In this paper, we bring these two concepts together and show how an agent can achieve a trade-off between these two competing characteristics of a plan.

186, TITLE: Multi-agent Attentional Activity Recognition
https://www.ijcai.org/proceedings/2019/186
AUTHORS: Kaixuan Chen, Lina Yao, Dalin Zhang, Bin Guo, Zhiwen Yu
HIGHLIGHT: In this work, we consider two inherent characteristics of human activities, the spatially-temporally varying salience of features and the relations between activities and corresponding body part motions.

187, TITLE: Deep Adversarial Social Recommendation
https://www.ijcai.org/proceedings/2019/187
AUTHORS: Wenqi Fan, Tyler Derr, Yao Ma, Jianping Wang, Jiliang Tang, Qing Li
HIGHLIGHT: In this paper, to address the aforementioned challenges, we propose a novel deep adversarial social recommendation framework DASO.

188, TITLE: A Semantics-based Model for Predicting Children's Vocabulary
https://www.ijcai.org/proceedings/2019/188
AUTHORS: Ishaan Grover, Hae Won Park, Cynthia Breazeal
HIGHLIGHT: In this paper, we present a model that uses word semantics (semantics-based model) to make inferences about a child's vocabulary from partial information about their existing vocabulary knowledge.

189, TITLE: STCA: Spatio-Temporal Credit Assignment with Delayed Feedback in Deep Spiking Neural Networks
https://www.ijcai.org/proceedings/2019/189
AUTHORS: Pengjie Gu, Rong Xiao, Gang Pan, Huajin Tang
HIGHLIGHT: To address this issue, we propose a novel spatio-temporal credit assignment algorithm called STCA for training deep spiking neural networks (DSNNs).

190, TITLE: Dynamic Item Block and Prediction Enhancing Block for Sequential Recommendation
https://www.ijcai.org/proceedings/2019/190
AUTHORS: Guibing Guo, Shichang Ouyang, Xiaodong He, Fajie Yuan, Xiaohua Liu
HIGHLIGHT: To resolve these issues, in this paper we propose two enhancing building blocks for sequential recommendation.

191, TITLE: Discrete Trust-aware Matrix Factorization for Fast Recommendation
https://www.ijcai.org/proceedings/2019/191
AUTHORS: Guibing Guo, Enneng Yang, Li Shen, Xiaochun Yang, Xiaodong He
HIGHLIGHT: In this paper we propose a discrete trust-aware matrix factorization (DTMF) model to take dual advantages of both social relations and discrete technique for fast recommendation.

192, TITLE: Decoding EEG by Visual-guided Deep Neural Networks
https://www.ijcai.org/proceedings/2019/192
AUTHORS: Zhicheng Jiao, Haoxuan You, Fan Yang, Xin Li, Han Zhang, Dinggang Shen
HIGHLIGHT: Inspired by the success of deep learning on image representation and neural decoding, we proposed a visual-guided EEG decoding method that contains a decoding stage and a generation stage.

193, TITLE: MiSC: Mixed Strategies Crowdsourcing
https://www.ijcai.org/proceedings/2019/193
AUTHORS: Ching Yun Ko, Rui Lin, Shu Li, Ngai Wong
HIGHLIGHT: In this work, we propose MiSC (Mixed Strategies Crowdsourcing), a versatile framework integrating arbitrary conventional crowdsourcing and tensor completion techniques.

194, TITLE: Exploring Computational User Models for Agent Policy Summarization
https://www.ijcai.org/proceedings/2019/194
AUTHORS: Isaac Lage, Daphna Lifschitz, Finale Doshi-Velez, Ofra Amir
HIGHLIGHT: In this paper, we explore the use of different models for extracting summaries.

195, TITLE: Minimizing Time-to-Rank: A Learning and Recommendation Approach
https://www.ijcai.org/proceedings/2019/195
AUTHORS: Haoming Li, Sujoy Sikdar, Rohit Vaish, Junming Wang, Lirong Xia, Chaonan Ye
HIGHLIGHT: We develop the first optimization framework to address this problem, and make theoretical as well as practical contributions.

196, TITLE: DeepFlow: Detecting Optimal User Experience From Physiological Data Using Deep Neural Networks
https://www.ijcai.org/proceedings/2019/196
AUTHORS: Marco Maier, Daniel Elsner, Chadly Marouane, Meike Zehnle, Christoph Fuchs
HIGHLIGHT: In this work, we present our findings towards estimating a user's flow state based on physiological signals measured using wearable devices.

197, TITLE: Why Can't You Do That HAL? Explaining Unsolvability of Planning Tasks
https://www.ijcai.org/proceedings/2019/197
AUTHORS: Sarath Sreedharan, Siddharth Srivastava, David Smith, Subbarao Kambhampati
HIGHLIGHT: In this paper, we show that hierarchical abstractions can be used to efficiently generate reasons for unsolvability of planning problems.

198, TITLE: Personalized Multimedia Item and Key Frame Recommendation
https://www.ijcai.org/proceedings/2019/198
AUTHORS: Le Wu, Lei Chen, Yonghui Yang, Richang Hong, Yong Ge, Xing Xie, Meng Wang
HIGHLIGHT: In this paper, we study the general problem of joint multimedia item and key frame recommendation in the absence of the fine-grained user-image behavior.

199, TITLE: Counterfactual Fairness: Unidentification, Bound and Algorithm
https://www.ijcai.org/proceedings/2019/199
AUTHORS: Yongkai Wu, Lu Zhang, Xintao Wu
HIGHLIGHT: In this paper, we address this limitation by mathematically bounding the unidentifiable counterfactual quantity, and develop a theoretically sound algorithm for constructing counterfactually fair classifiers.

200, TITLE: Fast and Accurate Classification with a Multi-Spike Learning Algorithm for Spiking Neurons
https://www.ijcai.org/proceedings/2019/200
AUTHORS: Rong Xiao, Qiang Yu, Rui Yan, Huajin Tang
HIGHLIGHT: To address these limitations, we propose a simple and effective multi-spike learning rule to train neurons to match their output spike number with a desired one.

201, TITLE: Achieving Causal Fairness through Generative Adversarial Networks
https://www.ijcai.org/proceedings/2019/201
AUTHORS: Depeng Xu, Yongkai Wu, Shuhan Yuan, Lu Zhang, Xintao Wu
HIGHLIGHT: In this paper, we investigate the problem of building causal fairness-aware generative adversarial networks (CFGAN), which can learn a close distribution from a given dataset, while also ensuring various causal fairness criteria based on a given causal graph.

202, TITLE: DeepAPF: Deep Attentive Probabilistic Factorization for Multi-site Video Recommendation
https://www.ijcai.org/proceedings/2019/202
AUTHORS: Huan Yan, Xiangning Chen, Chen Gao, Yong Li, Depeng Jin
HIGHLIGHT: In this paper, we investigate the user viewing behavior in multiple sites based on a large scale real dataset.

203, TITLE: An Input-aware Factorization Machine for Sparse Prediction
https://www.ijcai.org/proceedings/2019/203
AUTHORS: Yantao Yu, Zhen Wang, Bo Yuan
HIGHLIGHT: In this work, we improve FMs by explicitly considering the impact of individual input upon the representation of features.

204, TITLE: Multiple Noisy Label Distribution Propagation for Crowdsourcing
https://www.ijcai.org/proceedings/2019/204
AUTHORS: Hao Zhang, Liangxiao Jiang, Wenqiang Xu
HIGHLIGHT: To solve this problem, a multiple noisy label distribution propagation (MNLDP) method is proposed in this study.

205, TITLE: FAHT: An Adaptive Fairness-aware Decision Tree Classifier
https://www.ijcai.org/proceedings/2019/205
AUTHORS: Wenbin Zhang, Eirini Ntoutsi
HIGHLIGHT: In this paper, we introduce a learning mechanism to design a fair classifier for online stream based decision-making.

206, TITLE: ASP-based Discovery of Semi-Markovian Causal Models under Weaker Assumptions
https://www.ijcai.org/proceedings/2019/206
AUTHORS: Zhalama, Jiji Zhang, Frederick Eberhardt, Wolfgang Mayer, Mark Junjie Li
HIGHLIGHT: In this paper, we study weakenings of Faithfulness for constraint-based discovery of semi-Markovian causal models, which accommodate the possibility of latent variables, and show that both (1) and (2) remain the case in this more realistic setting.

207, TITLE: On the Integration of CP-nets in ASPRIN
https://www.ijcai.org/proceedings/2019/207
AUTHORS: Mario Alviano, Javier Romero, Torsten Schaub
HIGHLIGHT: In general, we extend ASPRIN with a preference program for CP-nets in order to compute most preferred answer sets via an iterative algorithm.For the specific case of acyclic CP-nets, we provide an approximation by partially ordered set preferences, which are in turn normalized by ASPRIN to take advantage of several highly optimized algorithms implemented by ASP solvers for computing optimal solutions.Finally, we take advantage of a linear-time computable function to address dominance testing for tree-shaped CP-nets.

208, TITLE: Compilation of Logical Arguments
https://www.ijcai.org/proceedings/2019/208
AUTHORS: Leila Amgoud, Dragan Doder
HIGHLIGHT: We show that they may miss intuitive consequences, and discuss two sources of this drawback: the definition of logical argument i) may prevent formulas from being justified, and ii) may allow irrelevant information in argument's support.

209, TITLE: Observations on Darwiche and Pearl's Approach for Iterated Belief Revision
https://www.ijcai.org/proceedings/2019/209
AUTHORS: Theofanis Aravanis, Pavlos Peppas, Mary-Anne Williams
HIGHLIGHT: In this article, we make further observations on the DP approach.

210, TITLE: Do You Need Infinite Time?
https://www.ijcai.org/proceedings/2019/210
AUTHORS: Alessandro Artale, Andrea Mazzullo, Ana Ozaki
HIGHLIGHT: In this paper, we investigate first-order temporal logic over finite traces, lifting some known results to a more expressive setting.

211, TITLE: Stratified Evidence Logics
https://www.ijcai.org/proceedings/2019/211
AUTHORS: Philippe Balbiani, David Fernández-Duque, Andreas Herzig, Emiliano Lorini
HIGHLIGHT: In this paper we propose an extended framework which allows one to explicitly quantify either the number of evidence sets, or effort, needed to justify a given proposition, provide a complete deductive calculus and a proof of decidability, and show how existing frameworks can be embedded into ours.

212, TITLE: Worst-Case Optimal Querying of Very Expressive Description Logics with Path Expressions and Succinct Counting
https://www.ijcai.org/proceedings/2019/212

AUTHORS: Bartosz Bednarczyk, Sebastian Rudolph
HIGHLIGHT: We show that this assumption can be dropped without an increase in complexity and EXPTIME-completeness can be achieved when bounding the number of query atoms, using a novel reduction from query entailment to knowledge base satisfiability.

213, TITLE: Comparing Options with Argument Schemes Powered by Cancellation
https://www.ijcai.org/proceedings/2019/213
AUTHORS: Khaled Belahcene, Christophe Labreuche, Nicolas Maudet, Vincent Mousseau, Wassila Ouerdane
HIGHLIGHT: We introduce a way of reasoning about preferences represented as pairwise comparative statements, based on a very simple yet appealing principle: cancelling out common values across statements.

214, TITLE: Possibilistic Games with Incomplete Information
https://www.ijcai.org/proceedings/2019/214
AUTHORS: Nahla Ben Amor, Helene Fargier, Régis Sabbadin, Meriem Trabelsi
HIGHLIGHT: This paper proposes a representation framework for ordinal games under possibilistic incomplete information (?-games) and extends the fundamental notion of Nash equilibrium (NE) to this framework.

215, TITLE: Reasoning about Disclosure in Data Integration in the Presence of Source Constraints
https://www.ijcai.org/proceedings/2019/215
AUTHORS: Michael Benedikt, Pierre Bourhis, Louis Jachiet, Michaël Thomazo
HIGHLIGHT: We study the problem of determining whether a given data integration system discloses a source query to an attacker in the presence of constraints, providing both lower and upper bounds on source-aware disclosure analysis.

216, TITLE: Mixed-World Reasoning with Existential Rules under Active-Domain Semantics
https://www.ijcai.org/proceedings/2019/216
AUTHORS: Meghyn Bienvenu, Pierre Bourhis
HIGHLIGHT: In this paper, we study reasoning with existential rules in a setting where some of the predicates may be closed (i.e., their content is fully specified by the data instance) and the remaining open predicates are interpreted under active-domain semantics.

217, TITLE: Guarantees for Sound Abstractions for Generalized Planning
https://www.ijcai.org/proceedings/2019/217
AUTHORS: Blai Bonet, Raquel Fuentetaja, Yolanda E-Martín, Daniel Borrajo
HIGHLIGHT: In this work we address this limitation by performing an analysis of the abstraction with respect to the collection, and show how to obtain formal guarantees for generalization.

218, TITLE: Ontology Approximation in Horn Description Logics
https://www.ijcai.org/proceedings/2019/218
AUTHORS: Anneke Bötcher, Carsten Lutz, Frank Wolter
HIGHLIGHT: In this paper, we show how to construct complete approximations.

219, TITLE: Oblivious and Semi-Oblivious Boundedness for Existential Rules
https://www.ijcai.org/proceedings/2019/219
AUTHORS: Pierre Bourhis, Michel Leclère, Marie-Laure Mugnier, Sophie Tison, Federico Ulliana, Lily Gallois
HIGHLIGHT: We study the notion of boundedness in the context positive existential rules, that is, wether there exists an upper bound to the depth of the chase procedure, that is independent from the initial instance.

220, TITLE: Reasoning about Quality and Fuzziness of Strategic Behaviours
https://www.ijcai.org/proceedings/2019/220
AUTHORS: Patricia Bouyer, Orna Kupferman, Nicolas Markey, Bastien Maubert, Aniello Murano, Giuseppe Perelli
HIGHLIGHT: We introduce and study SL[F], a quantitative extension of SL (Strategy Logic), one of the most natural and expressive logics describing strategic behaviours.

221, TITLE: The Complexity of Model Checking Knowledge and Time
https://www.ijcai.org/proceedings/2019/221
AUTHORS: Laura Bozzelli, Bastien Maubert, Aniello Murano
HIGHLIGHT: We establish the precise complexity of the model checking problem for the main logics of knowledge and time.

222, TITLE: Planning for LTLf /LDLf Goals in Non-Markovian Fully Observable Nondeterministic Domains
https://www.ijcai.org/proceedings/2019/222

AUTHORS: Ronen I. Brafman, Giuseppe De Giacomo
HIGHLIGHT: In this paper, we investigate non-Markovian Nondeterministic Fully Observable Planning Domains (NMFONDs), variants of Nondeterministic Fully Observable Planning Domains (FONDs) where the next state is determined by the full history leading to the current state.

223, TITLE: Causal Discovery with Cascade Nonlinear Additive Noise Model
https://www.ijcai.org/proceedings/2019/223
AUTHORS: Ruichu Cai, Jie Qiao, Kun Zhang, Zhenjie Zhang, Zhifeng Hao
HIGHLIGHT: In this work, we propose a cascade nonlinear additive noise model to represent such causal influences--each direct causal relation follows the nonlinear additive noise model but we observe only the initial cause and final effect.

224, TITLE: Enriching Ontology-based Data Access with Provenance
https://www.ijcai.org/proceedings/2019/224
AUTHORS: Diego Calvanese, Davide Lanti, Ana Ozaki, Rafael Penaloza, Guohui Xiao
HIGHLIGHT: We address this challenge by enriching OBDA with provenance semirings, taking inspiration from database theory.

225, TITLE: Chasing Sets: How to Use Existential Rules for Expressive Reasoning
https://www.ijcai.org/proceedings/2019/225
AUTHORS: David Carral, Irina Dragoste, Markus Krötzsch, Christian Lewe
HIGHLIGHT: We propose that modern existential rule reasoners can enable fully declarative implementations of rule-based inference methods in knowledge representation, in the sense that a particular calculus is captured by a fixed set of rules that can be evaluated on varying inputs (encoded as facts).

226, TITLE: Simple Conditionals with Constrained Right Weakening
https://www.ijcai.org/proceedings/2019/226
AUTHORS: Giovanni Casini, Thomas Meyer, Ivan Varzinczak
HIGHLIGHT: In this paper we introduce and investigate a very basic semantics for conditionals that can be used to define a broad class of conditional reasoning.

227, TITLE: Explanations for Query Answers under Existential Rules
https://www.ijcai.org/proceedings/2019/227
AUTHORS: ?smail ?lkan Ceylan, Thomas Lukasiewicz, Enrico Malizia, Andrius Vaicenavi?ius
HIGHLIGHT: In this paper, we close this gap, and study the problem of explaining query answers in terms of minimal subsets of database facts.

228, TITLE: Semantic Characterization of Data Services through Ontologies
https://www.ijcai.org/proceedings/2019/228
AUTHORS: Gianluca Cima, Maurizio Lenzerini, Antonella Poggi
HIGHLIGHT: We present a thorough complexity analysis of two computational problems, namely verification (checking whether a query is an s-to-o rewriting of a given data service), and computation (computing an s-to-o rewriting of a data service).

229, TITLE: Measuring the Likelihood of Numerical Constraints
https://www.ijcai.org/proceedings/2019/229
AUTHORS: Marco Console, Matthias Hofer, Leonid Libkin
HIGHLIGHT: Our goal is to measure the likelihood of the satisfaction of numerical constraints in the absence of prior information.

230, TITLE: From Statistical Transportability to Estimating the Effect of Stochastic Interventions
https://www.ijcai.org/proceedings/2019/230
AUTHORS: Juan D. Correa, Elias Bareinboim
HIGHLIGHT: In this paper, we study these violations through causal lens using the formalism of statistical transportability [Pearl and Bareinboim, 2011] (PB, for short).

231, TITLE: Answer Set Programming for Judgment Aggregation
https://www.ijcai.org/proceedings/2019/231
AUTHORS: Ronald de Haan, Marija Slavkovik
HIGHLIGHT: We take advantage of this and propose a natural and modular encoding of various judgment aggregation procedures and related problems in JA into ASP.

232, TITLE: An ASP Approach to Generate Minimal Countermodels in Intuitionistic Propositional Logic
https://www.ijcai.org/proceedings/2019/232
AUTHORS: Camillo Fiorentini
HIGHLIGHT: We present a procedure to generate minimal models in the number of worlds relying on Answer Set Programming (ASP).

233, TITLE: Learning Description Logic Concepts: When can Positive and Negative Examples be Separated?
https://www.ijcai.org/proceedings/2019/233
AUTHORS: Maurice Funk, Jean Christoph Jung, Carsten Lutz, Hadrien Pulcini, Frank Wolter
HIGHLIGHT: We study the fundamental question of when a separating DL concept exists and provide useful model-theoretic characterizations as well as complexity results for the associated decision problem.

234, TITLE: Aggressive Driving Saves More Time? Multi-task Learning for Customized Travel Time Estimation
https://www.ijcai.org/proceedings/2019/234
AUTHORS: Ruipeng Gao, Xiaoyu Guo, Fuyong Sun, Lin Dai, Jiayan Zhu, Chenxi Hu, Haibo Li
HIGHLIGHT: In this paper, we propose Customized Travel Time Estimation (CTTE) that fuses GPS traces, smartphone inertial data, and road network within a deep recurrent neural network.

235, TITLE: Approximating Integer Solution Counting via Space Quantification for Linear Constraints
https://www.ijcai.org/proceedings/2019/235
AUTHORS: Cunjing Ge, Feifei Ma, Xutong Ma, Fan Zhang, Pei Huang, Jian Zhang
HIGHLIGHT: In this paper, we present and prove a bound of such error for LCs.

236, TITLE: Best Answers over Incomplete Data : Complexity and First-Order Rewritings
https://www.ijcai.org/proceedings/2019/236
AUTHORS: Amélie Gheerbrant, Cristina Sirangelo
HIGHLIGHT: We compare different ways of casting query answering as a decision problem and characterise its complexity for first-order queries, showing significant differences in the behavior of best and certain answers.We then restrict attention to best answers for unions of conjunctive queries and produce a practical algorithm for finding them based on query rewriting techniques.

237, TITLE: On Division Versus Saturation in Pseudo-Boolean Solving
https://www.ijcai.org/proceedings/2019/237
AUTHORS: Stephan Gocht, Jakob Nordström, Amir Yehudayoff
HIGHLIGHT: We show that PB solvers with division instead of saturation can be exponentially stronger.

238, TITLE: On Finite and Unrestricted Query Entailment beyond SQ with Number Restrictions on Transitive Roles
https://www.ijcai.org/proceedings/2019/238
AUTHORS: Tomasz Gogacz, Víctor Gutiérrez-Basulto, Yazmín Ibáñez-García, Jean Christoph Jung, Filip Murlak
HIGHLIGHT: We study the description logic SQ with number restrictions applicable to transitive roles, extended with either nominals or inverse roles.

239, TITLE: Belief Revision Operators with Varying Attitudes Towards Initial Beliefs
https://www.ijcai.org/proceedings/2019/239
AUTHORS: Adrian Haret, Stefan Woltran
HIGHLIGHT: In this work we look at operators that can assume different attitudes towards original beliefs.

240, TITLE: Some Things are Easier for the Dumb and the Bright Ones (Beware the Average!)
https://www.ijcai.org/proceedings/2019/240
AUTHORS: Wojciech Jamroga, Micha? Knapik
HIGHLIGHT: In this paper, we look at the verification of models with "extreme" epistemic structure, and identify several special cases for which model checking is easier than in general.

241, TITLE: Converging on Common Knowledge
https://www.ijcai.org/proceedings/2019/241
AUTHORS: Dominik Klein, Rasmus Kræmmer Rendsvig
HIGHLIGHT: Focusing on the coordinated attack problem modeled using dynamic epistemic logic, this paper discusses unreliable communication protocols from a topological perspective and asks "If the generals may communicate indefinitely, will they then *converge* to a state of common knowledge?"

242, TITLE: Rational Inference Relations from Maximal Consistent Subsets Selection

https://www.ijcai.org/proceedings/2019/242
AUTHORS: Sébastien Konieczny, Pierre Marquis, Srdjan Vesic
HIGHLIGHT: In this paper we point out new such relations based on selection of some of the maximal consistent subsets, leading thus to inference relations with a stronger inferential power.

243, TITLE: How to Handle Missing Values in Multi-Criteria Decision Aiding?
https://www.ijcai.org/proceedings/2019/243
AUTHORS: Christophe Labreuche, Sébastien Destercke
HIGHLIGHT: Given a model that has been elicited on the complete set of attributes, we are looking thus for a way -- called restriction operator -- to automatically remove the missing attributes from this model.

244, TITLE: A Tractable, Expressive, and Eventually Complete First-Order Logic of Limited Belief
https://www.ijcai.org/proceedings/2019/244
AUTHORS: Gerhard Lakemeyer, Hector J. Levesque
HIGHLIGHT: In this paper, we propose a novel logic of limited belief, which has all three desired properties.

245, TITLE: Travel Time Estimation without Road Networks: An Urban Morphological Layout Representation Approach
https://www.ijcai.org/proceedings/2019/245
AUTHORS: Wuwei Lan, Yanyan Xu, Bin Zhao
HIGHLIGHT: Thus, this paper proposes an end-to-end multi-task deep neural model, named Deep Image to Time (DeepI2T), to learn the travel time mainly from the built environment images, a.k.a. the morphological layout images, and showoff the new state-of-the-art performance on real-world datasets in two cities.

246, TITLE: Augmenting Transfer Learning with Semantic Reasoning
https://www.ijcai.org/proceedings/2019/246
AUTHORS: Freddy Lécué, Jiaoyan Chen, Jeff Z. Pan, Huajun Chen
HIGHLIGHT: We exploit their semantics to augment transfer learning by dealing with when to transfer with semantic measurements and what to transfer with semantic embeddings.

247, TITLE: Revisiting Controlled Query Evaluation in Description Logics
https://www.ijcai.org/proceedings/2019/247
AUTHORS: Domenico Lembo, Riccardo Rosati, Domenico Fabio Savo
HIGHLIGHT: In this paper we instead consider query answering over all possible optimal censors.

248, TITLE: Unit Selection Based on Counterfactual Logic
https://www.ijcai.org/proceedings/2019/248
AUTHORS: Ang Li, Judea Pearl
HIGHLIGHT: Unlike previous works on this problem, which rely on ad-hoc heuristics, we approach this problem formally, using counterfactual logic, to properly capture the nature of the desired behavior.

249, TITLE: Story Ending Prediction by Transferable BERT
https://www.ijcai.org/proceedings/2019/249
AUTHORS: Zhongyang Li, Xiao Ding, Ting Liu
HIGHLIGHT: In this study, we investigate a transferable BERT (TransBERT) training framework, which can transfer not only general language knowledge from large-scale unlabeled data but also specific kinds of knowledge from various semantically related supervised tasks, for a target task.

250, TITLE: Geo-ALM: POI Recommendation by Fusing Geographical Information and Adversarial Learning Mechanism
https://www.ijcai.org/proceedings/2019/250
AUTHORS: Wei Liu, Zhi-Jie Wang, Bin Yao, Jian Yin
HIGHLIGHT: To alleviate these issues, we propose a geographical information based adversarial learning model (Geo-ALM), which can be viewed as a fusion of geographic features and generative adversarial networks.

251, TITLE: Automatic Verification of FSA Strategies via Counterexample-Guided Local Search for Invariants
https://www.ijcai.org/proceedings/2019/251
AUTHORS: Kailun Luo, Yongmei Liu
HIGHLIGHT: In this paper, we consider the representation of general strategies that solve a class of (possibly infinitely many) games with similar structures, and their automatic verification, which is an undecidable problem.

252, TITLE:	BiOWA for Preference Aggregation with Bipolar Scales: Application to Fair Optimization in Combinatorial Domains
https://www.ijcai.org/proceedings/2019/252
AUTHORS:	Hugo Martin, Patrice Perny
HIGHLIGHT:	We study the biOWA model for preference aggregation and multicriteria decision making from bipolar rating scales.

253, TITLE:	Satisfaction and Implication of Integrity Constraints in Ontology-based Data Access
https://www.ijcai.org/proceedings/2019/253
AUTHORS:	Charalampos Nikolaou, Bernardo Cuenca Grau, Egor V. Kostylev, Mark Kaminski, Ian Horrocks
HIGHLIGHT:	We extend ontology-based data access with integrity constraints over both the source and target schemas.

254, TITLE:	Monitoring of a Dynamic System Based on Autoencoders
https://www.ijcai.org/proceedings/2019/254
AUTHORS:	Aomar Osmani, Massinissa Hamidi, Salah Bouhouche
HIGHLIGHT:	We propose in this paper an autoencoder model-based approach for tracking abnormalities in industrial application.

255, TITLE:	Boosting for Comparison-Based Learning
https://www.ijcai.org/proceedings/2019/255
AUTHORS:	Michael Perrot, Ulrike von Luxburg
HIGHLIGHT:	We consider the problem of classification in a comparison-based setting: given a set of objects, we only have access to triplet comparisons of the form ``object A is closer to object B than to object C.'' In this paper we introduce TripletBoost, a new method that can learn a classifier just from such triplet comparisons.

256, TITLE:	Data Complexity and Rewritability of Ontology-Mediated Queries in Metric Temporal Logic under the Event-Based Semantics
https://www.ijcai.org/proceedings/2019/256
AUTHORS:	Vladislav Ryzhikov, Przemyslaw Andrzej Walega, Michael Zakharyaschev
HIGHLIGHT:	We investigate the data complexity of answering queries mediated by metric temporal logic ontologies under the event-based semantics assuming that data instances are finite timed words timestamped with binary fractions.

257, TITLE:	Belief Update without Compactness in Non-finitary Languages
https://www.ijcai.org/proceedings/2019/257
AUTHORS:	Jandson S Ribeiro, Abhaya Nayak, Renata Wassermann
HIGHLIGHT:	We explore the reason behind this, and subsequently provide an alternative constructive accounts of belief update which is characterised by the full set of KM postulates in this more general framework.

258, TITLE:	What Has Been Said? Identifying the Change Formula in a Belief Revision Scenario
https://www.ijcai.org/proceedings/2019/258
AUTHORS:	Nicolas Schwind, Katsumi Inoue, Sébastien Konieczny, Jean-Marie Lagniez, Pierre Marquis
HIGHLIGHT:	We present some sufficient conditions for it, identify its computational complexity, and report the results of some experiments about it.

259, TITLE:	Estimating Causal Effects of Tone in Online Debates
https://www.ijcai.org/proceedings/2019/259
AUTHORS:	Dhanya Sridhar, Lise Getoor
HIGHLIGHT:	In this paper, we estimate the causal effect of reply tones in debates on linguistic and sentiment changes in subsequent responses.

260, TITLE:	Out of Sight But Not Out of Mind: An Answer Set Programming Based Online Abduction Framework for Visual Sensemaking in Autonomous Driving
https://www.ijcai.org/proceedings/2019/260
AUTHORS:	Jakob Suchan, Mehul Bhatt, Srikrishna Varadarajan
HIGHLIGHT:	We demonstrate the need and potential of systematically integrated vision and semantics solutions for visual sensemaking (in the backdrop of autonomous driving).

261, TITLE:	DatalogMTL: Computational Complexity and Expressive Power
https://www.ijcai.org/proceedings/2019/261
AUTHORS:	Przemys?aw A. Wa??ga, Bernardo Cuenca Grau, Mark Kaminski, Egor V. Kostylev

HIGHLIGHT: We study the complexity and expressive power of DatalogMTL - a knowledge representation language that extends Datalog with operators from metric temporal logic (MTL) and which has found applications in ontology-based data access and stream reasoning.

262, TITLE: Cross-City Transfer Learning for Deep Spatio-Temporal Prediction
https://www.ijcai.org/proceedings/2019/262
AUTHORS: Leye Wang, Xu Geng, Xiaojuan Ma, Feng Liu, Qiang Yang
HIGHLIGHT: To address the problem, we propose a novel cross-city transfer learning method for deep spatio-temporal prediction tasks, called RegionTrans.

263, TITLE: A Modal Characterization Theorem for a Probabilistic Fuzzy Description Logic
https://www.ijcai.org/proceedings/2019/263
AUTHORS: Paul Wild, Lutz Schröder, Dirk Pattinson, Barbara König
HIGHLIGHT: In the present paper, we provide a characterization of the expressive power of this logic based on this observation: We prove a probabilistic analogue of the classical van Benthem theorem, which states that modal logic is precisely the bisimulation-invariant fragment of first-order logic.

264, TITLE: Graph WaveNet for Deep Spatial-Temporal Graph Modeling
https://www.ijcai.org/proceedings/2019/264
AUTHORS: Zonghan Wu, Shirui Pan, Guodong Long, Jing Jiang, Chengqi Zhang
HIGHLIGHT: To overcome these limitations, we propose in this paper a novel graph neural network architecture, {Graph WaveNet}, for spatial-temporal graph modeling.

265, TITLE: Profit-driven Task Assignment in Spatial Crowdsourcing
https://www.ijcai.org/proceedings/2019/265
AUTHORS: Jinfu Xia, Yan Zhao, Guanfeng Liu, Jiajie Xu, Min Zhang, Kai Zheng
HIGHLIGHT: To deal with this challenge, we propose a novel Profit-driven Task Assignment (PTA) problem, which aims to maximize the profit of the platform.

266, TITLE: Boosting Causal Embeddings via Potential Verb-Mediated Causal Patterns
https://www.ijcai.org/proceedings/2019/266
AUTHORS: Zhipeng Xie, Feiteng Mu
HIGHLIGHT: To solve this problem, this paper proposes a method to boost causal embeddings by exploring potential verb-mediated causal patterns.

267, TITLE: Graph Convolutional Networks using Heat Kernel for Semi-supervised Learning
https://www.ijcai.org/proceedings/2019/267
AUTHORS: Bingbing Xu, Huawei Shen, Qi Cao, Keting Cen, Xueqi Cheng
HIGHLIGHT: In this paper, we propose GraphHeat, leveraging heat kernel to enhance low-frequency filters and enforce smoothness in the signal variation on the graph.

268, TITLE: TransMS: Knowledge Graph Embedding for Complex Relations by Multidirectional Semantics
https://www.ijcai.org/proceedings/2019/268
AUTHORS: Shihui Yang, Jidong Tian, Honglun Zhang, Junchi Yan, Hao He, Yaohui Jin
HIGHLIGHT: In this paper, we propose a novel knowledge graph embedding method named TransMS, which translates and transmits multidirectional semantics: i) the semantics of head/tail entities and relations to tail/head entities with nonlinear functions and ii) the semantics from entities to relations with linear bias vectors.

269, TITLE: Neighborhood-Aware Attentional Representation for Multilingual Knowledge Graphs
https://www.ijcai.org/proceedings/2019/269
AUTHORS: Qiannan Zhu, Xiaofei Zhou, Jia Wu, Jianlong Tan, Li Guo
HIGHLIGHT: In this paper, we incorporate neighborhood subgraph-level information of entities, and propose a neighborhood-aware attentional representation method NAEA for multilingual knowledge graphs.

270, TITLE: The Expected-Length Model of Options
https://www.ijcai.org/proceedings/2019/270
AUTHORS: David Abel, John Winder, Marie desJardins, Michael Littman
HIGHLIGHT: This paper introduces and motivates the Expected-Length Model (ELM) for options, an alternate model for transition dynamics.

271, TITLE: Human-in-the-loop Active Covariance Learning for Improving Prediction in Small Data Sets
https://www.ijcai.org/proceedings/2019/271
AUTHORS: Homayun Afrabandpey, Tomi Peltola, Samuel Kaski
HIGHLIGHT: In contrast, we propose eliciting expert knowledge about pairwise feature similarities, to borrow statistical strength in the predictions, and using sequential decision making techniques to minimize the effort of the expert.

272, TITLE: Inter-node Hellinger Distance based Decision Tree
https://www.ijcai.org/proceedings/2019/272
AUTHORS: Pritom Saha Akash, Md. Eusha Kadir, Amin Ahsan Ali, Mohammad Shoyaib
HIGHLIGHT: This paper introduces a new splitting criterion called Inter-node Hellinger Distance (iHD) and a weighted version of it (iHDw) for constructing decision trees.

273, TITLE: Unobserved Is Not Equal to Non-existent: Using Gaussian Processes to Infer Immediate Rewards Across Contexts
https://www.ijcai.org/proceedings/2019/273
AUTHORS: Hamoon Azizsoltani, Yeo Jin Kim, Markel Sanz Ausin, Tiffany Barnes, Min Chi
HIGHLIGHT: We address the credit assignment problem by proposing a Gaussian Process (GP)-based immediate reward approximation algorithm and evaluate its effectiveness in 4 contexts where rewards can be delayed for long trajectories.

274, TITLE: STG2Seq: Spatial-Temporal Graph to Sequence Model for Multi-step Passenger Demand Forecasting
https://www.ijcai.org/proceedings/2019/274
AUTHORS: Lei Bai, Lina Yao, Salil S. Kanhere, Xianzhi Wang, Quan Z. Sheng
HIGHLIGHT: In this work, we propose to model multi-step citywide passenger demand prediction based on a graph and use a hierarchical graph convolutional structure to capture both spatial and temporal correlations simultaneously.

275, TITLE: Unsupervised Inductive Graph-Level Representation Learning via Graph-Graph Proximity
https://www.ijcai.org/proceedings/2019/275
AUTHORS: Yunsheng Bai, Hao Ding, Yang Qiao, Agustin Marinovic, Ken Gu, Ting Chen, Yizhou Sun, Wei Wang
HIGHLIGHT: We introduce a novel approach to graph-level representation learning, which is to embed an entire graph into a vector space where the embeddings of two graphs preserve their graph-graph proximity.

276, TITLE: Conditional GAN with Discriminative Filter Generation for Text-to-Video Synthesis
https://www.ijcai.org/proceedings/2019/276
AUTHORS: Yogesh Balaji, Martin Renqiang Min, Bing Bai, Rama Chellappa, Hans Peter Graf
HIGHLIGHT: In this work, we address this problem by introducing Text-Filter conditioning Generative Adversarial Network (TFGAN), a conditional GAN model with a novel multi-scale text-conditioning scheme that improves text-video associations.
In addition, we construct a synthetic dataset of text-conditioned moving shapes to systematically evaluate our conditioning scheme.

277, TITLE: An Actor-Critic-Attention Mechanism for Deep Reinforcement Learning in Multi-view Environments
https://www.ijcai.org/proceedings/2019/277
AUTHORS: Elaheh Barati, Xuewen Chen
HIGHLIGHT: In this paper, we propose a deep reinforcement learning method and an attention mechanism in a multi-view environment.

278, TITLE: Motion Invariance in Visual Environments
https://www.ijcai.org/proceedings/2019/278
AUTHORS: Alessandro Betti, Marco Gori, Stefano Melacci
HIGHLIGHT: In this paper, we claim that the processing of a stream of frames naturally leads to formulate the motion invariance principle, which enables the construction of a new theory of visual learning based on convolutional features.

279, TITLE: Optimal Exploitation of Clustering and History Information in Multi-armed Bandit
https://www.ijcai.org/proceedings/2019/279
AUTHORS: Djallel Bouneffouf, Srinivasan Parthasarathy, Horst Samulowitz, Martin Wistuba
HIGHLIGHT: We consider the stochastic multi-armed bandit problem and the contextual bandit problem with historical observations and pre-clustered arms.

280, TITLE: Incremental Elicitation of Rank-Dependent Aggregation Functions based on Bayesian Linear Regression
https://www.ijcai.org/proceedings/2019/280
AUTHORS: Nadjet Bourdache, Patrice Perny, Olivier Spanjaard

HIGHLIGHT: We introduce a new model-based incremental choice procedure for multicriteria decision support, that interleaves the analysis of the set of alternatives and the elicitation of weighting coefficients that specify the role of criteria in rank-dependent models such as ordered weighted averages (OWA) and Choquet integrals.

281, TITLE: A Gradient-Based Split Criterion for Highly Accurate and Transparent Model Trees
https://www.ijcai.org/proceedings/2019/281
AUTHORS: Klaus Broelemann, Gjergji Kasneci
HIGHLIGHT: We propose shallow model trees as a way to combine simple and highly transparent predictive models for higher predictive power without losing the transparency of the original models.

282, TITLE: Matrix Completion in the Unit Hypercube via Structured Matrix Factorization
https://www.ijcai.org/proceedings/2019/282
AUTHORS: Emanuele Bugliarello, Swayambhoo Jain, Vineeth Rakesh
HIGHLIGHT: In this paper, we address a key challenge faced by our company: predicting the efficiency of artists in rendering visual effects (VFX) in film shots.

283, TITLE: Active Learning within Constrained Environments through Imitation of an Expert Questioner
https://www.ijcai.org/proceedings/2019/283
AUTHORS: Kalesha Bullard, Yannick Schroecker, Sonia Chernova
HIGHLIGHT: This work uses imitation learning to enable an agent in a constrained environment to concurrently reason about both its internal learning goals and environmental constraints externally imposed, all within its objective function.

284, TITLE: Multi-View Active Learning for Video Recommendation
https://www.ijcai.org/proceedings/2019/284
AUTHORS: Jia-Jia Cai, Jun Tang, Qing-Guo Chen, Yao Hu, Xiaobo Wang, Sheng-Jun Huang
HIGHLIGHT: To train an effective recommender system with lower annotation cost, we propose an active learning approach to fully exploit the visual view of videos, while querying as few annotations as possible from the text view.

285, TITLE: Learning Disentangled Semantic Representation for Domain Adaptation
https://www.ijcai.org/proceedings/2019/285
AUTHORS: Ruichu Cai, Zijian Li, Pengfei Wei, Jie Qiao, Kun Zhang, Zhifeng Hao
HIGHLIGHT: Different from previous efforts on the entangled feature space, we aim to extract the domain invariant semantic information in the latent disentangled semantic representation (DSR) of the data.

286, TITLE: Tree Sampling Divergence: An Information-Theoretic Metric for Hierarchical Graph Clustering
https://www.ijcai.org/proceedings/2019/286
AUTHORS: Bertrand Charpentier, Thomas Bonald
HIGHLIGHT: We introduce the tree sampling divergence (TSD), an information-theoretic metric for assessing the quality of the hierarchical clustering of a graph.

287, TITLE: FakeTables: Using GANs to Generate Functional Dependency Preserving Tables with Bounded Real Data
https://www.ijcai.org/proceedings/2019/287
AUTHORS: Haipeng Chen, Sushil Jajodia, Jing Liu, Noseong Park, Vadim Sokolov, V. S. Subrahmanian
HIGHLIGHT: In this paper, our goal is to find a way to augment the sub-table by generating a synthetic table from the released sub-table, under the constraints that the generated synthetic table (i) has similar statistics as the entire table, and (ii) preserves the functional dependencies of the released sub-table.

288, TITLE: Theoretical Investigation of Generalization Bound for Residual Networks
https://www.ijcai.org/proceedings/2019/288
AUTHORS: Hao Chen, Zhanfeng Mo, Zhouwang Yang, Xiao Wang
HIGHLIGHT: This paper presents a framework for norm-based capacity control with respect to an lp,q-norm in weight-normalized Residual Neural Networks (ResNets).

289, TITLE: Learning Semantic Annotations for Tabular Data
https://www.ijcai.org/proceedings/2019/289
AUTHORS: Jiaoyan Chen, Ernesto Jimenez-Ruiz, Ian Horrocks, Charles Sutton
HIGHLIGHT: Unlike traditional lexical matching-based methods, we propose a deep prediction model that can fully exploit a table's contextual semantics, including table locality features learned by a Hybrid NeuralNetwork (HNN), and inter-column semantics features learned by a knowledge base (KB) lookup and query answering algorithm.

290, TITLE:　　　　Matching User with Item Set: Collaborative Bundle Recommendation with Deep Attention Network
https://www.ijcai.org/proceedings/2019/290
AUTHORS:　　　　Liang Chen, Yang Liu, Xiangnan He, Lianli Gao, Zibin Zheng
HIGHLIGHT:　　　　We contribute a neural network solution named DAM, short for Deep Attentive Multi-Task model, which is featured with two special designs: 1) We design a factorized attention network to aggregate the item embeddings in a bundle to obtain the bundle's representation; 2) We jointly model user-bundle interactions and user-item interactions in a multi-task manner to alleviate the scarcity of user-bundle interactions.

291, TITLE:　　　　Cooperative Pruning in Cross-Domain Deep Neural Network Compression
https://www.ijcai.org/proceedings/2019/291
AUTHORS:　　　　Shangyu Chen, Wenya Wang, Sinno Jialin Pan
HIGHLIGHT:　　　　In this paper, we propose a method to perform cross-domain pruning by cooperatively training in both domains: taking advantage of data and a pre-trained model from the source domain to assist pruning in the target domain.

292, TITLE:　　　　Extensible Cross-Modal Hashing
https://www.ijcai.org/proceedings/2019/292
AUTHORS:　　　　Tian-yi Chen, Lan Zhang, Shi-cong Zhang, Zi-long Li, Bai-chuan Huang
HIGHLIGHT:　　　　In this work, we propose a novel extensible cross-modal hashing (ECMH) to enable highly efficient and low-cost model extension.

293, TITLE:　　　　Semi-supervised User Profiling with Heterogeneous Graph Attention Networks
https://www.ijcai.org/proceedings/2019/293
AUTHORS:　　　　Weijian Chen, Yulong Gu, Zhaochun Ren, Xiangnan He, Hongtao Xie, Tong Guo, Dawei Yin, Yongdong Zhang
HIGHLIGHT:　　　　In this paper, we approach user profiling in a semi-supervised manner, developing a generic solution based on heterogeneous graph learning.

294, TITLE:　　　　ActiveHNE: Active Heterogeneous Network Embedding
https://www.ijcai.org/proceedings/2019/294
AUTHORS:　　　　Xia Chen, Guoxian Yu, Jun Wang, Carlotta Domeniconi, Zhao Li, Xiangliang Zhang
HIGHLIGHT:　　　　In DHNE, we introduce a novel semi-supervised heterogeneous network embedding method based on graph convolutional neural network.

295, TITLE:　　　　A Restart-based Rank-1 Evolution Strategy for Reinforcement Learning
https://www.ijcai.org/proceedings/2019/295
AUTHORS:　　　　Zefeng Chen, Yuren Zhou, Xiao-yu He, Siyu Jiang
HIGHLIGHT:　　　　To this end, this paper proposes a restart-based rank-1 evolution strategy for reinforcement learning.

296, TITLE:　　　　Co-Attentive Multi-Task Learning for Explainable Recommendation
https://www.ijcai.org/proceedings/2019/296
AUTHORS:　　　　Zhongxia Chen, Xiting Wang, Xing Xie, Tong Wu, Guoqing Bu, Yining Wang, Enhong Chen
HIGHLIGHT:　　　　In this paper, we propose a co-attentive multi-task learning model for explainable recommendation.

297, TITLE:　　　　Variational Graph Embedding and Clustering with Laplacian Eigenmaps
https://www.ijcai.org/proceedings/2019/297
AUTHORS:　　　　Zitai Chen, Chuan Chen, Zong Zhang, Zibin Zheng, Qingsong Zou
HIGHLIGHT:　　　　To address this issue, we propose a deep probabilistic model, called Variational Graph Embedding and Clustering with Laplacian Eigenmaps (VGECLE), which learns node embeddings and assigns node clusters simultaneously.

298, TITLE:　　　　Deep Active Learning for Anchor User Prediction
https://www.ijcai.org/proceedings/2019/298
AUTHORS:　　　　Anfeng Cheng, Chuan Zhou, Hong Yang, Jia Wu, Lei Li, Jianlong Tan, Li Guo
HIGHLIGHT:　　　　To this end, we present a deep active learning model for anchor user prediction (DALAUP for short).

299, TITLE:　　　　Success Prediction on Crowdfunding with Multimodal Deep Learning
https://www.ijcai.org/proceedings/2019/299
AUTHORS:　　　　Chaoran Cheng, Fei Tan, Xiurui Hou, Zhi Wei
HIGHLIGHT:　　　　In this work, we designed and evaluated advanced neural network schemes that combine information from different modalities to study the influence of sophisticated interactions among textual, visual, and metadata on project success prediction.

300, TITLE: Approximate Optimal Transport for Continuous Densities with Copulas
https://www.ijcai.org/proceedings/2019/300
AUTHORS: Jinjin Chi, Jihong Ouyang, Ximing Li, Yang Wang, Meng Wang
HIGHLIGHT: To this end, we develop a novel continuous OT method, namely Copula OT (Cop-OT).

301, TITLE: Ornstein Auto-Encoders
https://www.ijcai.org/proceedings/2019/301
AUTHORS: Youngwon Choi, Joong-Ho Won
HIGHLIGHT: We propose the Ornstein auto-encoder (OAE), a representation learning model for correlated data.

302, TITLE: A Strongly Asymptotically Optimal Agent in General Environments
https://www.ijcai.org/proceedings/2019/302
AUTHORS: Michael K. Cohen, Elliot Catt, Marcus Hutter
HIGHLIGHT: We present an algorithm for a policy whose value approaches the optimal value with probability 1 in all computable probabilistic environments, provided the agent has a bounded horizon.

303, TITLE: Extrapolating Paths with Graph Neural Networks
https://www.ijcai.org/proceedings/2019/303
AUTHORS: Jean-Baptiste Cordonnier, Andreas Loukas
HIGHLIGHT: Our main contribution is a graph neural network called Gretel.

304, TITLE: Recommending Links to Maximize the Influence in Social Networks
https://www.ijcai.org/proceedings/2019/304
AUTHORS: Federico Corò, Gianlorenzo D'Angelo, Yllka Velaj
HIGHLIGHT: In this paper we measure the popularity of a user by means of its social influence, which is its capability to influence other users' opinions, and we propose a link recommendation algorithm that evaluates the links to suggest according to their increment in social influence instead of their likelihood of being created.

305, TITLE: Three-Player Wasserstein GAN via Amortised Duality
https://www.ijcai.org/proceedings/2019/305
AUTHORS: Nhan Dam, Quan Hoang, Trung Le, Tu Dinh Nguyen, Hung Bui, Dinh Phung
HIGHLIGHT: We propose a new formulation for learning generative adversarial networks (GANs) using optimal transport cost (the general form of Wasserstein distance) as the objective criterion to measure the dissimilarity between target distribution and learned distribution.

306, TITLE: Learn Smart with Less: Building Better Online Decision Trees with Fewer Training Examples
https://www.ijcai.org/proceedings/2019/306
AUTHORS: Ariyam Das, Jin Wang, Sahil M. Gandhi, Jae Lee, Wei Wang, Carlo Zaniolo
HIGHLIGHT: In this paper, we efficiently employ statistical resampling techniques to build an online tree faster using fewer examples.

307, TITLE: IRC-GAN: Introspective Recurrent Convolutional GAN for Text-to-video Generation
https://www.ijcai.org/proceedings/2019/307
AUTHORS: Kangle Deng, Tianyi Fei, Xin Huang, Yuxin Peng
HIGHLIGHT: To address these issues, we present a novel Introspective Recurrent Convolutional GAN (IRC-GAN) approach.

308, TITLE: Marginal Posterior Sampling for Slate Bandits
https://www.ijcai.org/proceedings/2019/308
AUTHORS: Maria Dimakopoulou, Nikos Vlassis, Tony Jebara
HIGHLIGHT: We introduce a new Thompson sampling-based algorithm, called marginal posterior sampling, for online slate bandits, that is characterized by three key ideas.

309, TITLE: Reinforced Negative Sampling for Recommendation with Exposure Data
https://www.ijcai.org/proceedings/2019/309
AUTHORS: Jingtao Ding, Yuhan Quan, Xiangnan He, Yong Li, Depeng Jin
HIGHLIGHT: In this work, we improve the negative sampler by integrating the exposure data.

310, TITLE: Group Reconstruction and Max-Pooling Residual Capsule Network
https://www.ijcai.org/proceedings/2019/310

AUTHORS: Xinpeng Ding, Nannan Wang, Xinbo Gao, Jie Li, Xiaoyu Wang
HIGHLIGHT: In order to solve these shortcomings, this paper proposes a group reconstruction and max-pooling residual capsule network (GRMR-CapsNet).

311, TITLE: Crafting Efficient Neural Graph of Large Entropy
https://www.ijcai.org/proceedings/2019/311
AUTHORS: Minjing Dong, Hanting Chen, Yunhe Wang, Chang Xu
HIGHLIGHT: We propose to use graph entropy as the measurement, which shows useful properties to craft high-quality neural graphs and enables us to propose efficient algorithm to construct them as the initial network architecture.

312, TITLE: Joint Link Prediction and Network Alignment via Cross-graph Embedding
https://www.ijcai.org/proceedings/2019/312
AUTHORS: Xingbo Du, Junchi Yan, Hongyuan Zha
HIGHLIGHT: In this paper we argue that these two tasks are relevant and present a joint link prediction and network alignment framework, whereby a novel cross-graph node embedding technique is devised to allow for information propagation.

313, TITLE: Fast Algorithm for K-Truss Discovery on Public-Private Graphs
https://www.ijcai.org/proceedings/2019/313
AUTHORS: Soroush Ebadian, Xin Huang
HIGHLIGHT: This paper aims at finding k-truss efficiently in public-private graphs.

314, TITLE: Mindful Active Learning
https://www.ijcai.org/proceedings/2019/314
AUTHORS: Zhila Esna Ashari, Hassan Ghasemzadeh
HIGHLIGHT: We propose a novel active learning framework for activity recognition using wearable sensors.

315, TITLE: iDev: Enhancing Social Coding Security by Cross-platform User Identification Between GitHub and Stack Overflow
https://www.ijcai.org/proceedings/2019/315
AUTHORS: Yujie Fan, Yiming Zhang, Shifu Hou, Lingwei Chen, Yanfang Ye, Chuan Shi, Liang Zhao, Shouhuai Xu
HIGHLIGHT: To enhance the social coding security, in this paper, we propose to automate cross-platform user identification between GitHub and Stack Overflow to combat the attackers who attempt to poison the modern software programming ecosystem.

316, TITLE: Hybrid Actor-Critic Reinforcement Learning in Parameterized Action Space
https://www.ijcai.org/proceedings/2019/316
AUTHORS: Zhou Fan, Rui Su, Weinan Zhang, Yong Yu
HIGHLIGHT: In this paper we propose a hybrid architecture of actor-critic algorithms for reinforcement learning in parameterized action space, which consists of multiple parallel sub-actor networks to decompose the structured action space into simpler action spaces along with a critic network to guide the training of all sub-actor networks.

317, TITLE: GSTNet: Global Spatial-Temporal Network for Traffic Flow Prediction
https://www.ijcai.org/proceedings/2019/317
AUTHORS: Shen Fang, Qi Zhang, Gaofeng Meng, Shiming Xiang, Chunhong Pan
HIGHLIGHT: To capture the global dynamic spatial-temporal correlations, we propose a Global Spatial-Temporal Network (GSTNet), which consists of several layers of spatial-temporal blocks.

318, TITLE: Partial Label Learning by Semantic Difference Maximization
https://www.ijcai.org/proceedings/2019/318
AUTHORS: Lei Feng, Bo An
HIGHLIGHT: By exploiting such dissimilarity relationships from label space, we propose a novel approach that aims to maximize the latent semantic differences of the two instances whose ground-truth labels are definitely different, while training the desired model simultaneously, thereby continually enlarging the gap of label confidences between two instances of different classes.

319, TITLE: Deep Session Interest Network for Click-Through Rate Prediction
https://www.ijcai.org/proceedings/2019/319
AUTHORS: Yufei Feng, Fuyu Lv, Weichen Shen, Menghan Wang, Fei Sun, Yu Zhu, Keping Yang
HIGHLIGHT: Based on this observation, we propose a novel CTR model named Deep Session Interest Network (DSIN) that leverages users' multiple historical sessions in their behavior sequences.

320, TITLE: Curriculum Learning for Cumulative Return Maximization

https://www.ijcai.org/proceedings/2019/320
AUTHORS: Francesco Foglino, Christiano Coletto Christakou, Ricardo Luna Gutierrez, Matteo Leonetti
HIGHLIGHT: We propose a task sequencing algorithm maximizing the cumulative return, that is, the return obtained by the agent across all the learning episodes.

321, TITLE: Advocacy Learning: Learning through Competition and Class-Conditional Representations
https://www.ijcai.org/proceedings/2019/321
AUTHORS: Ian Fox, Jenna Wiens
HIGHLIGHT: We introduce advocacy learning, a novel supervised training scheme for attention-based classification problems.

322, TITLE: Neurons Merging Layer: Towards Progressive Redundancy Reduction for Deep Supervised Hashing
https://www.ijcai.org/proceedings/2019/322
AUTHORS: Chaoyou Fu, Liangchen Song, Xiang Wu, Guoli Wang, Ran He
HIGHLIGHT: This paper proposes a simple yet effective Neurons Merging Layer (NMLayer) for deep supervised hashing.

323, TITLE: Deep Multi-Agent Reinforcement Learning with Discrete-Continuous Hybrid Action Spaces
https://www.ijcai.org/proceedings/2019/323
AUTHORS: Haotian Fu, Hongyao Tang, Jianye Hao, Zihan Lei, Yingfeng Chen, Changjie Fan
HIGHLIGHT: Our work fills this gap by proposing two novel algorithms: Deep Multi-Agent Parameterized Q-Networks (Deep MAPQN) and Deep Multi-Agent Hierarchical Hybrid Q-Networks (Deep MAHHQN).

324, TITLE: Automatic Successive Reinforcement Learning with Multiple Auxiliary Rewards
https://www.ijcai.org/proceedings/2019/324
AUTHORS: Zhao-Yang Fu, De-Chuan Zhan, Xin-Chun Li, Yi-Xing Lu
HIGHLIGHT: In this paper, we focus on the investigation of reinforcement learning with more than one auxiliary reward.

325, TITLE: RecoNet: An Interpretable Neural Architecture for Recommender Systems
https://www.ijcai.org/proceedings/2019/325
AUTHORS: Francesco Fusco, Michalis Vlachos, Vasileios Vasileiadis, Kathrin Wardatzky, Johannes Schneider
HIGHLIGHT: We present a simple neural architecture for recommender systems that lifts several of these shortcomings.

326, TITLE: Reward Learning for Efficient Reinforcement Learning in Extractive Document Summarisation
https://www.ijcai.org/proceedings/2019/326
AUTHORS: Yang Gao, Christian M. Meyer, Mohsen Mesgar, Iryna Gurevych
HIGHLIGHT: We propose RELIS, a novel RL paradigm that learns a reward function with Learning-to-Rank (L2R) algorithms at training time and uses this reward function to train an input-specific RL policy at test time.

327, TITLE: Fully Distributed Bayesian Optimization with Stochastic Policies
https://www.ijcai.org/proceedings/2019/327
AUTHORS: Javier Garcia-Barcos, Ruben Martinez-Cantin
HIGHLIGHT: In this paper, we present a new method for fully distributed Bayesian optimization, which can be combined with any acquisition function.

328, TITLE: Scalable Semi-Supervised SVM via Triply Stochastic Gradients
https://www.ijcai.org/proceedings/2019/328
AUTHORS: Xiang Geng, Bin Gu, Xiang Li, Wanli Shi, Guansheng Zheng, Heng Huang
HIGHLIGHT: To address this problem, in this paper, we propose a triply stochastic gradient algorithm for S3VM, called TSGS3VM.

329, TITLE: Perception-Aware Point-Based Value Iteration for Partially Observable Markov Decision Processes
https://www.ijcai.org/proceedings/2019/329
AUTHORS: Mahsa Ghasemi, Ufuk Topcu
HIGHLIGHT: We develop a novel point-based value iteration algorithm that incorporates this greedy strategy to pick perception actions for each sampled belief point in each iteration.

330, TITLE: Efficient Regularization Parameter Selection for Latent Variable Graphical Models via Bi-Level Optimization
https://www.ijcai.org/proceedings/2019/330
AUTHORS: Joachim Giesen, Frank Nussbaum, Christopher Schneider

HIGHLIGHT:　　　　Here, we develop an adaptive variant of Benson's algorithm for the semidefinite case and show that it keeps the known approximation and run time guarantees.

331, TITLE:　　　　Using Natural Language for Reward Shaping in Reinforcement Learning
https://www.ijcai.org/proceedings/2019/331
AUTHORS:　　　　Prasoon Goyal, Scott Niekum, Raymond J. Mooney
HIGHLIGHT:　　　　In this work, we use natural language instructions to perform reward shaping.

332, TITLE:　　　　Sketched Iterative Algorithms for Structured Generalized Linear Models
https://www.ijcai.org/proceedings/2019/332
AUTHORS:　　　　Qilong Gu, Arindam Banerjee
HIGHLIGHT:　　　　In this paper, we study sketched iterative algorithms, in particular sketched-PGD (projected gradient descent) and sketched-SVRG (stochastic variance reduced gradient) for structured generalized linear model, and illustrate that these methods continue to have geometric convergence to the statistical error under suitable assumptions.

333, TITLE:　　　　SPINE: Structural Identity Preserved Inductive Network Embedding
https://www.ijcai.org/proceedings/2019/333
AUTHORS:　　　　Junliang Guo, Linli Xu, Jingchang Liu
HIGHLIGHT:　　　　In this paper we present SPINE, a method that can jointly capture the local proximity and proximities at any distance, while being inductive to efficiently deal with unseen nodes or networks.

334, TITLE:　　　　Discriminative Sample Generation for Deep Imbalanced Learning
https://www.ijcai.org/proceedings/2019/334
AUTHORS:　　　　Ting Guo, Xingquan Zhu, Yang Wang, Fang Chen
HIGHLIGHT:　　　　In this paper, we propose a discriminative variational autoencoder (DVAE) to assist deep learning from data with imbalanced class distributions.

335, TITLE:　　　　Affine Equivariant Autoencoder
https://www.ijcai.org/proceedings/2019/335
AUTHORS:　　　　Xifeng Guo, En Zhu, Xinwang Liu, Jianping Yin
HIGHLIGHT:　　　　To fill this gap, in this paper, we propose an affine equivariant autoencoder to learn features that are equivariant to the affine transformation in an unsupervised manner.

336, TITLE:　　　　AdaLinUCB: Opportunistic Learning for Contextual Bandits
https://www.ijcai.org/proceedings/2019/336
AUTHORS:　　　　Xueying Guo, Xiaoxiao Wang, Xin Liu
HIGHLIGHT:　　　　In this paper, we propose and study opportunistic contextual bandits - a special case of contextual bandits where the exploration cost varies under different environmental conditions, such as network load or return variation in recommendations.

337, TITLE:　　　　Zero-shot Learning with Many Classes by High-rank Deep Embedding Networks
https://www.ijcai.org/proceedings/2019/337
AUTHORS:　　　　Yuchen Guo, Guiguang Ding, Jungong Han, Hang Shao, Xin Lou, Qionghai Dai
HIGHLIGHT:　　　　To address this issue, we propose a novel approach, termed as High-rank Deep Embedding Networks (GREEN), for ZSL with many classes.

338, TITLE:　　　　Landmark Selection for Zero-shot Learning
https://www.ijcai.org/proceedings/2019/338
AUTHORS:　　　　Yuchen Guo, Guiguang Ding, Jungong Han, Chenggang Yan, Jiyong Zhang, Qionghai Dai
HIGHLIGHT:　　　　Motivated by this idea, we propose a novel approach, termed as Landmark Selection(LAST) for ZSL.

339, TITLE:　　　　MineRL: A Large-Scale Dataset of Minecraft Demonstrations
https://www.ijcai.org/proceedings/2019/339
AUTHORS:　　　　William H. Guss, Brandon Houghton, Nicholay Topin, Phillip Wang, Cayden Codel, Manuela Veloso, Ruslan Salakhutdinov
HIGHLIGHT:　　　　Therefore, we introduce a comprehensive, large-scale, simulator-paired dataset of human demonstrations: MineRL.

340, TITLE:　　　　Confirmatory Bayesian Online Change Point Detection in the Covariance Structure of Gaussian Processes
https://www.ijcai.org/proceedings/2019/340

AUTHORS: Jiyeon Han, Kyowoon Lee, Anh Tong, Jaesik Choi
HIGHLIGHT: In this paper, we propose statistical hypothesis tests for detecting covariance structure changes in locally smooth time series modeled by Gaussian Processes (GPs).

341, TITLE: Attribute Aware Pooling for Pedestrian Attribute Recognition
https://www.ijcai.org/proceedings/2019/341
AUTHORS: Kai Han, Yunhe Wang, Han Shu, Chuanjian Liu, Chunjing Xu, Chang Xu
HIGHLIGHT: We tackle these challenges that hampers the development of CNNs for multi-attribute classification by fully exploiting the correlation between different attributes.

342, TITLE: Network Embedding under Partial Monitoring for Evolving Networks
https://www.ijcai.org/proceedings/2019/342
AUTHORS: Yu Han, Jie Tang, Qian Chen
HIGHLIGHT: So in this paper, we study a novel and challenging problem, i.e., network embedding under partial monitoring for evolving networks.

343, TITLE: Deep Active Learning with Adaptive Acquisition
https://www.ijcai.org/proceedings/2019/343
AUTHORS: Manuel Haussmann, Fred Hamprecht, Melih Kandemir
HIGHLIGHT: We present a method to break this vicious circle by defining the acquisition function as a learning predictor and training it by reinforcement feedback collected from each labeling round.

344, TITLE: One Network for Multi-Domains: Domain Adaptive Hashing with Intersectant Generative Adversarial Networks
https://www.ijcai.org/proceedings/2019/344
AUTHORS: Tao He, Yuan-Fang Li, Lianli Gao, Dongxiang Zhang, Jingkuan Song
HIGHLIGHT: In this paper, we explore an end-to-end domain adaptive learning framework that simultaneously and precisely generates discriminative hash codes and classifies target domain images.

345, TITLE: Deliberation Learning for Image-to-Image Translation
https://www.ijcai.org/proceedings/2019/345
AUTHORS: Tianyu He, Yingce Xia, Jianxin Lin, Xu Tan, Di He, Tao Qin, Zhibo Chen
HIGHLIGHT: In this paper, we go beyond this learning framework by considering an additional polishing step on the output image.

346, TITLE: Online Learning from Capricious Data Streams: A Generative Approach
https://www.ijcai.org/proceedings/2019/346
AUTHORS: Yi He, Baijun Wu, Di Wu, Ege Beyazit, Sheng Chen, Xindong Wu
HIGHLIGHT: We propose a generative graphical model to model the construction process, and show that learning from the universal feature space can effectively improve performance with theoretical analysis.

347, TITLE: Learning Topic Models by Neighborhood Aggregation
https://www.ijcai.org/proceedings/2019/347
AUTHORS: Ryohei Hisano
HIGHLIGHT: The present paper shows that topic modeling with pre-trained word embedding vectors can be viewed as implementing a neighborhood aggregation algorithm where messages are passed through a network defined over words.

348, TITLE: Group-based Learning of Disentangled Representations with Generalizability for Novel Contents
https://www.ijcai.org/proceedings/2019/348
AUTHORS: Haruo Hosoya
HIGHLIGHT: In this study, we introduce a novel deep generative model, called group-based variational autoencoders.

349, TITLE: Robust Learning from Noisy Side-information by Semidefinite Programming
https://www.ijcai.org/proceedings/2019/349
AUTHORS: En-Liang Hu, Quanming Yao
HIGHLIGHT: Motivated by such a trend and needs, we pursue robustness in semi-definite programming (SDP) in this paper.

350, TITLE: Hybrid Item-Item Recommendation via Semi-Parametric Embedding
https://www.ijcai.org/proceedings/2019/350
AUTHORS: Peng Hu, Rong Du, Yao Hu, Nan Li

HIGHLIGHT:　　　　In this paper, we propose a semi-parametric embedding framework for this problem.

351, TITLE:　　　　Cascaded Algorithm-Selection and Hyper-Parameter Optimization with Extreme-Region Upper Confidence Bound Bandit
https://www.ijcai.org/proceedings/2019/351
AUTHORS:　　　　Yi-Qi Hu, Yang Yu, Jun-Da Liao
HIGHLIGHT:　　　　In this paper, we propose a cascaded approach for algorithm selection and hyper-parameter optimization.

352, TITLE:　　　　Deep Metric Learning: The Generalization Analysis and an Adaptive Algorithm
https://www.ijcai.org/proceedings/2019/352
AUTHORS:　　　　Mengdi Huai, Hongfei Xue, Chenglin Miao, Liuyi Yao, Lu Su, Changyou Chen, Aidong Zhang
HIGHLIGHT:　　　　In this paper, we try to fill up this research gap and derive the generalization error bound for DML.

353, TITLE:　　　　Privacy-aware Synthesizing for Crowdsourced Data
https://www.ijcai.org/proceedings/2019/353
AUTHORS:　　　　Mengdi Huai, Di Wang, Chenglin Miao, Jinhui Xu, Aidong Zhang
HIGHLIGHT:　　　　To address this challenge, in this paper, we propose a novel privacy-aware synthesizing method (i.e., PrisCrowd) for crowdsourced data, based on which the data collector can release users' data with strong privacy protection for their private information, while at the same time, the data analyzer can achieve good utility from the released data.

354, TITLE:　　　　Zeroth-Order Stochastic Alternating Direction Method of Multipliers for Nonconvex Nonsmooth Optimization
https://www.ijcai.org/proceedings/2019/354
AUTHORS:　　　　Feihu Huang, Shangqian Gao, Songcan Chen, Heng Huang
HIGHLIGHT:　　　　In the paper, thus, we propose a class of fast zeroth-order stochastic ADMM methods (\emph{i.e.}, ZO-SVRG-ADMM and ZO-SAGA-ADMM) for solving nonconvex problems with multiple nonsmooth penalties, based on the coordinate smoothing gradient estimator.

355, TITLE:　　　　Nostalgic Adam: Weighting More of the Past Gradients When Designing the Adaptive Learning Rate
https://www.ijcai.org/proceedings/2019/355
AUTHORS:　　　　Haiwen Huang, Chang Wang, Bin Dong
HIGHLIGHT:　　　　We therefore propose an algorithm called the Nostalgic Adam (NosAdam) with theoretically guaranteed convergence at the best known convergence rate.

356, TITLE:　　　　Multi-view Spectral Clustering Network
https://www.ijcai.org/proceedings/2019/356
AUTHORS:　　　　Zhenyu Huang, Joey Tianyi Zhou, Xi Peng, Changqing Zhang, Hongyuan Zhu, Jiancheng Lv
HIGHLIGHT:　　　　In this paper, we propose a novel multi-view clustering method named multi-view spectral clustering network (MvSCN) which could be the first deep version of multi-view spectral clustering to the best of our knowledge.

357, TITLE:　　　　Conditions on Features for Temporal Difference-Like Methods to Converge
https://www.ijcai.org/proceedings/2019/357
AUTHORS:　　　　Marcus Hutter, Samuel Yang-Zhao, Sultan Javed Majeed
HIGHLIGHT:　　　　In this paper, we provide a complete characterization of non-uniqueness issues for a large class of reinforcement learning algorithms, simultaneously unifying many counter-examples to convergence in a theoretical framework.

358, TITLE:　　　　Entangled Kernels
https://www.ijcai.org/proceedings/2019/358
AUTHORS:　　　　Riikka Huusari, Hachem Kadri
HIGHLIGHT:　　　　We propose an efficient two-step algorithm for this framework, where the entangled kernel is learned based on a novel extension of kernel alignment to operator-valued kernels.

359, TITLE:　　　　Efficient Protocol for Collaborative Dictionary Learning in Decentralized Networks
https://www.ijcai.org/proceedings/2019/359
AUTHORS:　　　　Tsuyoshi Idé, Rudy Raymond, Dzung T. Phan
HIGHLIGHT:　　　　To this end, we propose a new framework for collaborative dictionary learning.

360, TITLE:　　　　SlateQ: A Tractable Decomposition for Reinforcement Learning with Recommendation Sets
https://www.ijcai.org/proceedings/2019/360
AUTHORS:　　　　Eugene Ie, Vihan Jain, Jing Wang, Sanmit Narvekar, Ritesh Agarwal, Rui Wu, Heng-Tze Cheng, Tushar Chandra, Craig Boutilier

HIGHLIGHT: Under mild assumptions on user choice behavior, we show that the long-term value (LTV) of a slate can be decomposed into a tractable function of its component item-wise LTVs.

361, TITLE: Accelerating Extreme Classification via Adaptive Feature Agglomeration
https://www.ijcai.org/proceedings/2019/361
AUTHORS: Ankit Jalan, Purushottam Kar
HIGHLIGHT: We propose DEFRAG, an adaptive feature agglomeration technique to accelerate extreme classification algorithms.

362, TITLE: Assumed Density Filtering Q-learning
https://www.ijcai.org/proceedings/2019/362
AUTHORS: Heejin Jeong, Clark Zhang, George J. Pappas, Daniel D. Lee
HIGHLIGHT: In this paper, we introduce a novel Bayesian approach to off-policy TD methods, called as ADFQ, which updates beliefs on state-action values, Q, through an online Bayesian inference method known as Assumed Density Filtering.

363, TITLE: Learning to Learn Gradient Aggregation by Gradient Descent
https://www.ijcai.org/proceedings/2019/363
AUTHORS: Jinlong Ji, Xuhui Chen, Qianlong Wang, Lixing Yu, Pan Li
HIGHLIGHT: In this work, motivated by learning to learn, we propose a meta-learning approach to coordinate the learning process in the master-slave type of distributed systems.

364, TITLE: Patent Citation Dynamics Modeling via Multi-Attention Recurrent Networks
https://www.ijcai.org/proceedings/2019/364
AUTHORS: Taoran Ji, Zhiqian Chen, Nathan Self, Kaiqun Fu, Chang-Tien Lu, Naren Ramakrishnan
HIGHLIGHT: In this paper, we propose a sequence-to-sequence model which employs an attention-of-attention mechanism to capture the dependencies of these multiple time sequences.

365, TITLE: Recurrent Generative Networks for Multi-Resolution Satellite Data: An Application in Cropland Monitoring
https://www.ijcai.org/proceedings/2019/365
AUTHORS: Xiaowei Jia, Mengdie Wang, Ankush Khandelwal, Anuj Karpatne, Vipin Kumar
HIGHLIGHT: In this work, we propose a generative model to combine multi-scale remote sensing data to detect croplands at high resolution.

366, TITLE: Dynamic Hypergraph Neural Networks
https://www.ijcai.org/proceedings/2019/366
AUTHORS: Jianwen Jiang, Yuxuan Wei, Yifan Feng, Jingxuan Cao, Yue Gao
HIGHLIGHT: To tackle this issue, we propose a dynamic hypergraph neural networks framework (DHGNN), which is composed of the stacked layers of two modules: dynamic hypergraph construction (DHG) and hypergrpah convolution (HGC).

367, TITLE: Convolutional Gaussian Embeddings for Personalized Recommendation with Uncertainty
https://www.ijcai.org/proceedings/2019/367
AUTHORS: Junyang Jiang, Deqing Yang, Yanghua Xiao, Chenlu Shen
HIGHLIGHT: Addressing this problem, we propose a unified deep recommendation framework employing Gaussian embeddings, which are proven adaptive to uncertain preferences exhibited by some users, resulting in better user representations and recommendation performance.

368, TITLE: Robust Low-Tubal-Rank Tensor Completion via Convex Optimization
https://www.ijcai.org/proceedings/2019/368
AUTHORS: Qiang Jiang, Michael Ng
HIGHLIGHT: This paper considers the problem of recovering multidimensional array, in particular third-order tensor, from a random subset of its arbitrarily corrupted entries.

369, TITLE: CensNet: Convolution with Edge-Node Switching in Graph Neural Networks
https://www.ijcai.org/proceedings/2019/369
AUTHORS: Xiaodong Jiang, Pengsheng Ji, Sheng Li
HIGHLIGHT: In this paper, we present CensNet, Convolution with Edge-Node Switching graph neural network, for semi-supervised classification and regression in graph-structured data with both node and edge features.

370, TITLE: Network-Specific Variational Auto-Encoder for Embedding in Attribute Networks
https://www.ijcai.org/proceedings/2019/370

AUTHORS: Di Jin, Bingyi Li, Pengfei Jiao, Dongxiao He, Weixiong Zhang
HIGHLIGHT: Specifically, as a part of the dual decoder, we develop a novel method based on a Gaussian mixture model and the block model to reconstruct network structures.

371, TITLE: Hypergraph Induced Convolutional Manifold Networks
https://www.ijcai.org/proceedings/2019/371
AUTHORS: Taisong Jin, Liujuan Cao, Baochang Zhang, Xiaoshuai Sun, Cheng Deng, Rongrong Ji
HIGHLIGHT: Specifically, two innovative designs are provides: 1) our manifold preserving method is implemented based on a mini-batch, which can be efficiently plugged into the existing DCNN training pipelines and be scalable for large datasets; 2) a robust hypergraph is built for each mini-batch, which not only offers a strong robustness against typical noise, but also captures the variances from multiple features.

372, TITLE: Submodular Batch Selection for Training Deep Neural Networks
https://www.ijcai.org/proceedings/2019/372
AUTHORS: K J Joseph, Vamshi Teja R, Krishnakant Singh, Vineeth N Balasubramanian
HIGHLIGHT: We design an efficient, greedy algorithm which can give high-quality solutions to this NP-hard combinatorial optimization problem.

373, TITLE: Obstacle Tower: A Generalization Challenge in Vision, Control, and Planning
https://www.ijcai.org/proceedings/2019/373
AUTHORS: Arthur Juliani, Ahmed Khalifa, Vincent-Pierre Berges, Jonathan Harper, Ervin Teng, Hunter Henry, Adam Crespi, Julian Togelius, Danny Lange
HIGHLIGHT: In this paper we outline the environment and provide a set of baseline results produced by current state-of-the-art Deep RL methods as well as human players.

374, TITLE: Interactive Teaching Algorithms for Inverse Reinforcement Learning
https://www.ijcai.org/proceedings/2019/374
AUTHORS: Parameswaran Kamalaruban, Rati Devidze, Volkan Cevher, Adish Singla
HIGHLIGHT: We present an interactive teaching framework where a teacher adaptively chooses the next demonstration based on learner's current policy.

375, TITLE: Multiple Partitions Aligned Clustering
https://www.ijcai.org/proceedings/2019/375
AUTHORS: Zhao Kang, Zipeng Guo, Shudong Huang, Siying Wang, Wenyu Chen, Yuanzhang Su, Zenglin Xu
HIGHLIGHT: Orthogonal to existing techniques, in this paper, we propose to leverage the multi-view information by fusing partitions.

376, TITLE: Twin-Systems to Explain Artificial Neural Networks using Case-Based Reasoning: Comparative Tests of Feature-Weighting Methods in ANN-CBR Twins for XAI
https://www.ijcai.org/proceedings/2019/376
AUTHORS: Eoin M. Kenny, Mark T. Keane
HIGHLIGHT: In this paper, twin-systems are described to address the eXplainable artificial intelligence (XAI) problem, where a black box model is mapped to a white box "twin" that is more interpretable, with both systems using the same dataset.

377, TITLE: What to Expect of Classifiers? Reasoning about Logistic Regression with Missing Features
https://www.ijcai.org/proceedings/2019/377
AUTHORS: Pasha Khosravi, Yitao Liang, YooJung Choi, Guy Van den Broeck
HIGHLIGHT: In this paper, we propose a novel framework that classifies examples with missing features by computing the expected prediction with respect to a feature distribution.

378, TITLE: Outlier Detection for Time Series with Recurrent Autoencoder Ensembles
https://www.ijcai.org/proceedings/2019/378
AUTHORS: Tung Kieu, Bin Yang, Chenjuan Guo, Christian S. Jensen
HIGHLIGHT: We propose two solutions to outlier detection in time series based on recurrent autoencoder ensembles.

379, TITLE: DeepMellow: Removing the Need for a Target Network in Deep Q-Learning
https://www.ijcai.org/proceedings/2019/379
AUTHORS: Seungchan Kim, Kavosh Asadi, Michael Littman, George Konidaris
HIGHLIGHT: We argue that using a target network is incompatible with online reinforcement learning, and it is possible to achieve faster and more stable learning without a target network when we use Mellowmax, an alternative softmax operator.

380, TITLE: Sequential and Diverse Recommendation with Long Tail
https://www.ijcai.org/proceedings/2019/380
AUTHORS: Yejin Kim, Kwangseob Kim, Chanyoung Park, Hwanjo Yu
HIGHLIGHT: Thus, we propose a sequential and diverse recommendation model that predicts a ranked list containing general items and also diverse items without compromising significant accuracy.To learn temporal preference on diverse items as well as on general items, we cluster and relocate consumed long tail items to make a pseudo ground truth for diverse items and learn the preference on long tail using recurrent neural network, which enables us to directly learn a ranking function.

381, TITLE: Single-Channel Signal Separation and Deconvolution with Generative Adversarial Networks
https://www.ijcai.org/proceedings/2019/381
AUTHORS: Qiuqiang Kong, Yong Xu, Philip J. B. Jackson, Wenwu Wang, Mark D. Plumbley
HIGHLIGHT: We propose a synthesizing-decomposition (S-D) approach to solve the single-channel separation and deconvolution problem.

382, TITLE: Autoregressive Policies for Continuous Control Deep Reinforcement Learning
https://www.ijcai.org/proceedings/2019/382
AUTHORS: Dmytro Korenkevych, A. Rupam Mahmood, Gautham Vasan, James Bergstra
HIGHLIGHT: We introduce a family of stationary autoregressive (AR) stochastic processes to facilitate exploration in continuous control domains.

383, TITLE: Adaptive Ensemble Active Learning for Drifting Data Stream Mining
https://www.ijcai.org/proceedings/2019/383
AUTHORS: Bartosz Krawczyk, Alberto Cano
HIGHLIGHT: In this paper, we propose a novel active learning approach based on ensemble algorithms that is capable of using multiple base classifiers during the label query process.

384, TITLE: Learning Sound Events from Webly Labeled Data
https://www.ijcai.org/proceedings/2019/384
AUTHORS: Anurag Kumar, Ankit Shah, Alexander Hauptmann, Bhiksha Raj
HIGHLIGHT: In this work, we introduce webly labeled learning for sound events which aims to remove human supervision altogether from the learning process.

385, TITLE: Harnessing the Vulnerability of Latent Layers in Adversarially Trained Models
https://www.ijcai.org/proceedings/2019/385
AUTHORS: Nupur Kumari, Mayank Singh, Abhishek Sinha, Harshitha Machiraju, Balaji Krishnamurthy, Vineeth N Balasubramanian
HIGHLIGHT: Leveraging this information, we introduce a new technique Latent Adversarial Training (LAT) which comprises of fine-tuning the adversarially trained models to ensure the robustness at the feature layers.

386, TITLE: Perturbed-History Exploration in Stochastic Multi-Armed Bandits
https://www.ijcai.org/proceedings/2019/386
AUTHORS: Branislav Kveton, Csaba Szepesvári, Mohammad Ghavamzadeh, Craig Boutilier
HIGHLIGHT: We propose an online algorithm for cumulative regret minimization in a stochastic multi-armed bandit.

387, TITLE: Meta Reinforcement Learning with Task Embedding and Shared Policy
https://www.ijcai.org/proceedings/2019/387
AUTHORS: Lin Lan, Zhenguo Li, Xiaohong Guan, Pinghui Wang
HIGHLIGHT: In this paper, we propose to capture the shared information on the one hand and meta-learn how to quickly abstract the specific information about a task on the other hand.

388, TITLE: The Dangers of Post-hoc Interpretability: Unjustified Counterfactual Explanations
https://www.ijcai.org/proceedings/2019/388
AUTHORS: Thibault Laugel, Marie-Jeanne Lesot, Christophe Marsala, Xavier Renard, Marcin Detyniecki
HIGHLIGHT: This paper focuses on the case of counterfactual explanations and asks whether the generated instances can be justified, i.e. continuously connected to some ground-truth data.

389, TITLE: Correlation-Sensitive Next-Basket Recommendation
https://www.ijcai.org/proceedings/2019/389
AUTHORS: Duc-Trong Le, Hady W. Lauw, Yuan Fang

HIGHLIGHT: Towards this objective, we develop a hierarchical network architecture codenamed Beacon to model basket sequences.

390, TITLE: Learning Multiple Maps from Conditional Ordinal Triplets
https://www.ijcai.org/proceedings/2019/390
AUTHORS: Dung D. Le, Hady W. Lauw
HIGHLIGHT: We formulate this problem as conditional ordinal embedding, which learns a distinct low-dimensional representation conditioned on each aspect, yet allows collaboration across aspects via a shared representation.

391, TITLE: Learning Generative Adversarial Networks from Multiple Data Sources
https://www.ijcai.org/proceedings/2019/391
AUTHORS: Trung Le, Quan Hoang, Hung Vu, Tu Dinh Nguyen, Hung Bui, Dinh Phung
HIGHLIGHT: In this paper, we extend GAN to the problem of generating data that are not only close to a primary data source but also required to be different from auxiliary data sources.

392, TITLE: Action Space Learning for Heterogeneous User Behavior Prediction
https://www.ijcai.org/proceedings/2019/392
AUTHORS: Dongha Lee, Chanyoung Park, Hyunjun Ju, Junyoung Hwang, Hwanjo Yu
HIGHLIGHT: This paper proposes a novel metric learning method, called METAS, to jointly model heterogeneous user behaviors.

393, TITLE: Learning Shared Knowledge for Deep Lifelong Learning using Deconvolutional Networks
https://www.ijcai.org/proceedings/2019/393
AUTHORS: Seungwon Lee, James Stokes, Eric Eaton
HIGHLIGHT: Inspired by this idea, we introduce a novel architecture for sharing latent factorized representations in convolutional neural networks (CNNs).

394, TITLE: Similarity Preserving Representation Learning for Time Series Clustering
https://www.ijcai.org/proceedings/2019/394
AUTHORS: Qi Lei, Jinfeng Yi, Roman Vaculin, Lingfei Wu, Inderjit S. Dhillon
HIGHLIGHT: In this paper, we bridge this gap by proposing an efficient representation learning framework that is able to convert a set of time series with various lengths to an instance-feature matrix.

395, TITLE: Differentially Private Optimal Transport: Application to Domain Adaptation
https://www.ijcai.org/proceedings/2019/395
AUTHORS: Nam LeTien, Amaury Habrard, Marc Sebban
HIGHLIGHT: In this paper, we address the challenging task of privacy preserving domain adaptation by optimal transport.

396, TITLE: Cascading Non-Stationary Bandits: Online Learning to Rank in the Non-Stationary Cascade Model
https://www.ijcai.org/proceedings/2019/396
AUTHORS: Chang Li, Maarten de Rijke
HIGHLIGHT: In this paper, we study the online learning to rank problem in a non-stationary environment where user preferences change abruptly at an unknown moment in time.

397, TITLE: A Review-Driven Neural Model for Sequential Recommendation
https://www.ijcai.org/proceedings/2019/397
AUTHORS: Chenliang Li, Xichuan Niu, Xiangyang Luo, Zhenzhong Chen, Cong Quan
HIGHLIGHT: In this paper, we propose a novel review-driven neural sequential recommendation model (named RNS) by considering user's intrinsic preference (long-term) and sequential patterns (short-term).

398, TITLE: Hierarchical Representation Learning for Bipartite Graphs
https://www.ijcai.org/proceedings/2019/398
AUTHORS: Chong Li, Kunyang Jia, Dan Shen, C.J. Richard Shi, Hongxia Yang
HIGHLIGHT: We propose to cluster the users into a set of communities and make recommendations based on the information of the users in the community collectively.

399, TITLE: Multi-Class Learning using Unlabeled Samples: Theory and Algorithm
https://www.ijcai.org/proceedings/2019/399
AUTHORS: Jian Li, Yong Liu, Rong Yin, Weiping Wang

HIGHLIGHT: In this paper, we investigate the generalization performance of multi-class classification, for which we obtain a shaper error bound by using the notion of local Rademacher complexity and additional unlabeled samples, substantially improving the state-of-the-art bounds in existing multi-class learning methods.

400, TITLE: Approximate Manifold Regularization: Scalable Algorithm and Generalization Analysis
https://www.ijcai.org/proceedings/2019/400
AUTHORS: Jian Li, Yong Liu, Rong Yin, Weiping Wang
HIGHLIGHT: In this paper, we propose an efficient graph-based semi-supervised algorithm with a sound theoretical guarantee.

401, TITLE: Dense Transformer Networks for Brain Electron Microscopy Image Segmentation
https://www.ijcai.org/proceedings/2019/401
AUTHORS: Jun Li, Yongjun Chen, Lei Cai, Ian Davidson, Shuiwang Ji
HIGHLIGHT: In this work, we propose the dense transformer networks, which can learn the shapes and sizes of patches from data.

402, TITLE: Learning Interpretable Deep State Space Model for Probabilistic Time Series Forecasting
https://www.ijcai.org/proceedings/2019/402
AUTHORS: Longyuan Li, Junchi Yan, Xiaokang Yang, Yaohui Jin
HIGHLIGHT: We propose a deep state space model for probabilistic time series forecasting whereby the non-linear emission model and transition model are parameterized by networks and the dependency is modeled by recurrent neural nets.

403, TITLE: Improving the Robustness of Deep Neural Networks via Adversarial Training with Triplet Loss
https://www.ijcai.org/proceedings/2019/403
AUTHORS: Pengcheng Li, Jinfeng Yi, Bowen Zhou, Lijun Zhang
HIGHLIGHT: In this paper, we improve the robustness of DNNs by utilizing techniques of Distance Metric Learning.

404, TITLE: Flexible Multi-View Representation Learning for Subspace Clustering
https://www.ijcai.org/proceedings/2019/404
AUTHORS: Ruihuang Li, Changqing Zhang, Qinghua Hu, Pengfei Zhu, Zheng Wang
HIGHLIGHT: In this paper, we propose to conduct subspace clustering based on Flexible Multi-view Representation (FMR) learning, which avoids using partial information for data reconstruction.

405, TITLE: Improved Algorithm on Online Clustering of Bandits
https://www.ijcai.org/proceedings/2019/405
AUTHORS: Shuai Li, Wei Chen, Shuai Li, Kwong-Sak Leung
HIGHLIGHT: A more efficient algorithm is proposed with simple set structures to represent clusters.

406, TITLE: Linear Time Complexity Time Series Clustering with Symbolic Pattern Forest
https://www.ijcai.org/proceedings/2019/406
AUTHORS: Xiaosheng Li, Jessica Lin, Liang Zhao
HIGHLIGHT: This paper presents a novel time series clustering algorithm that has linear time complexity.

407, TITLE: Learning Network Embedding with Community Structural Information
https://www.ijcai.org/proceedings/2019/407
AUTHORS: Yu Li, Ying Wang, Tingting Zhang, Jiawei Zhang, Yi Chang
HIGHLIGHT: Motivated by this, we propose a novel network embedding framework NECS to learn the Network Embedding with Community Structural information, which preserves the high-order proximity and incorporates the community structure in vertex representation learning.

408, TITLE: ARMIN: Towards a More Efficient and Light-weight Recurrent Memory Network
https://www.ijcai.org/proceedings/2019/408
AUTHORS: Zhangheng Li, Jia-Xing Zhong, Jingjia Huang, Tao Zhang, Thomas Li, Ge Li
HIGHLIGHT: In this paper, we introduce a novel MANN, the Auto-addressing and Recurrent Memory Integrating Network (ARMIN) to address these issues.

409, TITLE: Deep Adversarial Multi-view Clustering Network
https://www.ijcai.org/proceedings/2019/409
AUTHORS: Zhaoyang Li, Qianqian Wang, Zhiqiang Tao, Quanxue Gao, Zhaohua Yang

HIGHLIGHT:　　　　In this paper, we propose a novel multi-view clustering method, named Deep Adversarial Multi-view Clustering (DAMC) network, to learn the intrinsic structure embedded in multi-view data.

410, TITLE:　　　　GCN-LASE: Towards Adequately Incorporating Link Attributes in Graph Convolutional Networks
https://www.ijcai.org/proceedings/2019/410
AUTHORS:　　　　Ziyao Li, Liang Zhang, Guojie Song
HIGHLIGHT:　　　　We propose GCN-LASE (GCN with Link Attributes and Sampling Estimation), a novel GCN model taking both node and link attributes as inputs.

411, TITLE:　　　　Learning K-way D-dimensional Discrete Embedding for Hierarchical Data Visualization and Retrieval
https://www.ijcai.org/proceedings/2019/411
AUTHORS:　　　　Xiaoyuan Liang, Martin Renqiang Min, Hongyu Guo, Guiling Wang
HIGHLIGHT:　　　　In this paper, we propose a regularized autoencoder framework to learn compact Hierarchical K-way D-dimensional (HKD) discrete embedding of symbols or data points, aiming at capturing essential semantic structures of data.

412, TITLE:　　　　Worst-Case Discriminative Feature Selection
https://www.ijcai.org/proceedings/2019/412
AUTHORS:　　　　Shuangli Liao, Quanxue Gao, Feiping Nie, Yang Liu, Xiangdong Zhang
HIGHLIGHT:　　　　In this paper, we propose a new criterion for discriminative feature selection, worst-case discriminative feature selection (WDFS).

413, TITLE:　　　　Image-to-Image Translation with Multi-Path Consistency Regularization
https://www.ijcai.org/proceedings/2019/413
AUTHORS:　　　　Jianxin Lin, Yingce Xia, Yijun Wang, Tao Qin, Zhibo Chen
HIGHLIGHT:　　　　In this work, we introduce a new kind of loss, multi-path consistency loss, which evaluates the differences between direct translation from source domain to target domain and indirect translation from source domain to an auxiliary domain to target domain, to regularize training.

414, TITLE:　　　　Balanced Clustering: A Uniform Model and Fast Algorithm
https://www.ijcai.org/proceedings/2019/414
AUTHORS:　　　　Weibo Lin, Zhu He, Mingyu Xiao
HIGHLIGHT:　　　　In this paper, we present a balanced clustering model that is to minimize the sum of squared distances to cluster centers, with uniform regularization functions to control the balance degree of the clustering results.

415, TITLE:　　　　Feature Prioritization and Regularization Improve Standard Accuracy and Adversarial Robustness
https://www.ijcai.org/proceedings/2019/415
AUTHORS:　　　　Chihuang Liu, Joseph JaJa
HIGHLIGHT:　　　　We propose a model that employs feature prioritization by a nonlinear attention module and L2 feature regularization to improve the adversarial robustness and the standard accuracy relative to adversarial training.

416, TITLE:　　　　Learning Instance-wise Sparsity for Accelerating Deep Models
https://www.ijcai.org/proceedings/2019/416
AUTHORS:　　　　Chuanjian Liu, Yunhe Wang, Kai Han, Chunjing Xu, Chang Xu
HIGHLIGHT:　　　　In contrast, we study this problem from a different perspective by respecting the difference between data.

417, TITLE:　　　　Learning Robust Distance Metric with Side Information via Ratio Minimization of Orthogonally Constrained L21-Norm Distances
https://www.ijcai.org/proceedings/2019/417
AUTHORS:　　　　Kai Liu, Lodewijk Brand, Hua Wang, Feiping Nie
HIGHLIGHT:　　　　In our objective, the orthonormal constraint is enforced to avoid degenerate solutions.

418, TITLE:　　　　Prototype Propagation Networks (PPN) for Weakly-supervised Few-shot Learning on Category Graph
https://www.ijcai.org/proceedings/2019/418
AUTHORS:　　　　Lu Liu, Tianyi Zhou, Guodong Long, Jing Jiang, Lina Yao, Chengqi Zhang
HIGHLIGHT:　　　　In this paper, we show that weakly-labeled data can significantly improve the performance of meta-learning on few-shot classification.

419, TITLE:　　　　Margin Learning Embedded Prediction for Video Anomaly Detection with A Few Anomalies
https://www.ijcai.org/proceedings/2019/419
AUTHORS:　　　　Wen Liu, Weixin Luo, Zhengxin Li, Peilin Zhao, Shenghua Gao

HIGHLIGHT:	Under the assumption that normal events can be well predicted, we propose a Margin Learning Embedded Prediction (MLEP) framework.

420, TITLE:	Supervised Short-Length Hashing
https://www.ijcai.org/proceedings/2019/420
AUTHORS:	Xingbo Liu, Xiushan Nie, Quan Zhou, Xiaoming Xi, Lei Zhu, Yilong Yin
HIGHLIGHT:	To address this issue, in this study, we propose a novel supervised short-length hashing (SSLH).

421, TITLE:	Graph and Autoencoder Based Feature Extraction for Zero-shot Learning
https://www.ijcai.org/proceedings/2019/421
AUTHORS:	Yang Liu, Deyan Xie, Quanxue Gao, Jungong Han, Shujian Wang, Xinbo Gao
HIGHLIGHT:	In order to solve these problems, we formulate a novel framework named Graph and Autoencoder Based Feature Extraction (GAFE) to seek a low-rank mapping to preserve the sub-manifold of samples.

422, TITLE:	Accelerated Incremental Gradient Descent using Momentum Acceleration with Scaling Factor
https://www.ijcai.org/proceedings/2019/422
AUTHORS:	Yuanyuan Liu, Fanhua Shang, Licheng Jiao
HIGHLIGHT:	In this paper, we design a novel and simple momentum to accelerate the classical SAGA algorithm, and propose a direct accelerated incremental gradient descent algorithm.

423, TITLE:	Omnidirectional Scene Text Detection with Sequential-free Box Discretization
https://www.ijcai.org/proceedings/2019/423
AUTHORS:	Yuliang Liu, Sheng Zhang, Lianwen Jin, Lele Xie, Yaqiang Wu, Zhepeng Wang
HIGHLIGHT:	To address this issue, in this paper, we propose a novel method called Sequential-free Box Discretization (SBD) by discretizing the bounding box into key edges (KE) which can further derive more effective methods to improve detection performance.

424, TITLE:	Hi-Fi Ark: Deep User Representation via High-Fidelity Archive Network
https://www.ijcai.org/proceedings/2019/424
AUTHORS:	Zheng Liu, Yu Xing, Fangzhao Wu, Mingxiao An, Xing Xie
HIGHLIGHT:	In this work, a novel user representation framework, Hi-Fi Ark, is proposed.

425, TITLE:	Learning Low-precision Neural Networks without Straight-Through Estimator (STE)
https://www.ijcai.org/proceedings/2019/425
AUTHORS:	Zhi-Gang Liu, Matthew Mattina
HIGHLIGHT:	We propose an alternative methodology called alpha-blending (AB), which quantizes neural networks to low precision using stochastic gradient descent (SGD).

426, TITLE:	Parametric Manifold Learning of Gaussian Mixture Models
https://www.ijcai.org/proceedings/2019/426
AUTHORS:	Ziquan Liu, Lei Yu, Janet H. Hsiao, Antoni B. Chan
HIGHLIGHT:	In this paper, we propose Parametric Manifold Learning of GMMs (PML-GMM), which learns a parametric mapping from a low-dimensional latent space to a high-dimensional GMM manifold.

427, TITLE:	Multi-Objective Generalized Linear Bandits
https://www.ijcai.org/proceedings/2019/427
AUTHORS:	Shiyin Lu, Guanghui Wang, Yao Hu, Lijun Zhang
HIGHLIGHT:	In this paper, we study the multi-objective bandits (MOB) problem, where a learner repeatedly selects one arm to play and then receives a reward vector consisting of multiple objectives.

428, TITLE:	Knowledge Amalgamation from Heterogeneous Networks by Common Feature Learning
https://www.ijcai.org/proceedings/2019/428
AUTHORS:	Sihui Luo, Xinchao Wang, Gongfan Fang, Yao Hu, Dapeng Tao, Mingli Song
HIGHLIGHT:	In this paper, we study a deep-model reusing task, where we are given as input pre-trained networks of heterogeneous architectures specializing in distinct tasks, as teacher models.

429, TITLE:	E²GAN: End-to-End Generative Adversarial Network for Multivariate Time Series Imputation
https://www.ijcai.org/proceedings/2019/429
AUTHORS:	Yonghong Luo, Ying Zhang, Xiangrui Cai, Xiaojie Yuan

HIGHLIGHT: This paper proposes an end-to-end generative model E²GAN to impute missing values in multivariate time series.

430, TITLE: Weakly Supervised Multi-Label Learning via Label Enhancement
https://www.ijcai.org/proceedings/2019/430
AUTHORS: JiaQi Lv, Ning Xu, RenYi Zheng, Xin Geng
HIGHLIGHT: In this paper, a novel two-stage strategy named Weakly Supervised Multi-label Learning via Label Enhancement (WSMLLE) is proposed to learn from weakly supervised data via label enhancement.

431, TITLE: AttnSense: Multi-level Attention Mechanism For Multimodal Human Activity Recognition
https://www.ijcai.org/proceedings/2019/431
AUTHORS: HaoJie Ma, Wenzhong Li, Xiao Zhang, Songcheng Gao, Sanglu Lu
HIGHLIGHT: In this paper, we propose a novel attention-based multimodal neural network model called AttnSense for multimodal human activity recognition.

432, TITLE: Monte Carlo Tree Search for Policy Optimization
https://www.ijcai.org/proceedings/2019/432
AUTHORS: Xiaobai Ma, Katherine Driggs-Campbell, Zongzhang Zhang, Mykel J. Kochenderfer
HIGHLIGHT: This paper presents a method for policy optimization based on Monte-Carlo tree search and gradient-free optimization.

433, TITLE: Coarse-to-Fine Image Inpainting via Region-wise Convolutions and Non-Local Correlation
https://www.ijcai.org/proceedings/2019/433
AUTHORS: Yuqing Ma, Xianglong Liu, Shihao Bai, Lei Wang, Dailan He, Aishan Liu
HIGHLIGHT: To address these problems, we first propose region-wise convolutions to locally deal with the different types of regions, which can help exactly reconstruct existing regions and roughly infer the missing ones from existing regions at the same time.

434, TITLE: On Principled Entropy Exploration in Policy Optimization
https://www.ijcai.org/proceedings/2019/434
AUTHORS: Jincheng Mei, Chenjun Xiao, Ruitong Huang, Dale Schuurmans, Martin Müller
HIGHLIGHT: In this paper, we investigate Exploratory Conservative Policy Optimization (ECPO), a policy optimization strategy that improves exploration behavior while assuring monotonic progress in a principled objective.

435, TITLE: Anytime Bottom-Up Rule Learning for Knowledge Graph Completion
https://www.ijcai.org/proceedings/2019/435
AUTHORS: Christian Meilicke, Melisachew Wudage Chekol, Daniel Ruffinelli, Heiner Stuckenschmidt
HIGHLIGHT: We propose an anytime bottom-up technique for learning logical rules from large knowledge graphs.

436, TITLE: Unsupervised Hierarchical Temporal Abstraction by Simultaneously Learning Expectations and Representations
https://www.ijcai.org/proceedings/2019/436
AUTHORS: Katherine Metcalf, David Leake
HIGHLIGHT: This paper presents ENHAnCE, an algorithm that simultaneously learns a predictive model of the input stream and generates representations of the concepts being observed.

437, TITLE: Meta-Learning for Low-resource Natural Language Generation in Task-oriented Dialogue Systems
https://www.ijcai.org/proceedings/2019/437
AUTHORS: Fei Mi, Minlie Huang, Jiyong Zhang, Boi Faltings
HIGHLIGHT: In this paper, we study NLG in a low-resource setting to generate sentences in new scenarios with handful training examples.

438, TITLE: Robust Flexible Feature Selection via Exclusive L21 Regularization
https://www.ijcai.org/proceedings/2019/438
AUTHORS: Di Ming, Chris Ding
HIGHLIGHT: Thus, in this paper, we introduce a novel regularization called "exclusive L21", which is short for "L21 with exclusive lasso", towards robust flexible feature selection.

439, TITLE: Advantage Amplification in Slowly Evolving Latent-State Environments
https://www.ijcai.org/proceedings/2019/439
AUTHORS: Martin Mladenov, Ofer Meshi, Jayden Ooi, Dale Schuurmans, Craig Boutilier

HIGHLIGHT: In this work, we identify and analyze several key hurdles for RL in such environments, including belief state error and small action advantage.

440, TITLE: Deep Variational Koopman Models: Inferring Koopman Observations for Uncertainty-Aware Dynamics Modeling and Control
https://www.ijcai.org/proceedings/2019/440
AUTHORS: Jeremy Morton, Freddie D. Witherden, Mykel J. Kochenderfer
HIGHLIGHT: We introduce the Deep Variational Koopman (DVK) model, a method for inferring distributions over observations that can be propagated linearly in time.

441, TITLE: DyAt Nets: Dynamic Attention Networks for State Forecasting in Cyber-Physical Systems
https://www.ijcai.org/proceedings/2019/441
AUTHORS: Nikhil Muralidhar, Sathappan Muthiah, Naren Ramakrishnan
HIGHLIGHT: In this paper, we propose DyAt (Dynamic Attention) networks, a novel deep learning sequence to sequence (Seq2Seq) model with a novel hierarchical attention mechanism for long-term time series state forecasting.

442, TITLE: Outlier-Robust Multi-Aspect Streaming Tensor Completion and Factorization
https://www.ijcai.org/proceedings/2019/442
AUTHORS: Mehrnaz Najafi, Lifang He, Philip S. Yu
HIGHLIGHT: In this paper, we propose a novel method for Outlier-Robust Multi-Aspect Streaming Tensor Completion and Factorization (OR-MSTC), which is a technique capable of dealing with missing values and outliers in multi-aspect streaming tensor data.

443, TITLE: Incremental Learning of Planning Actions in Model-Based Reinforcement Learning
https://www.ijcai.org/proceedings/2019/443
AUTHORS: Jun Hao Alvin Ng, Ronald P. A. Petrick
HIGHLIGHT: We introduce the novel concept of reliability as an intrinsic motivation for MBRL, and a method to learn from failure to prevent repeated instances of similar failures.

444, TITLE: Group LASSO with Asymmetric Structure Estimation for Multi-Task Learning
https://www.ijcai.org/proceedings/2019/444
AUTHORS: Saullo H. G. Oliveira, André R. Gonçalves, Fernando J. Von Zuben
HIGHLIGHT: Our proposal is the first attempt in the literature to conceive a Group LASSO with asymmetric transference formulation, looking for the best of both worlds in a framework that admits the overlap of groups.

445, TITLE: Hill Climbing on Value Estimates for Search-control in Dyna
https://www.ijcai.org/proceedings/2019/445
AUTHORS: Yangchen Pan, Hengshuai Yao, Amir-massoud Farahmand, Martha White
HIGHLIGHT: In this work, we propose to generate such states by using the trajectory obtained from Hill Climbing (HC) the current estimate of the value function.

446, TITLE: Indirect Trust is Simple to Establish
https://www.ijcai.org/proceedings/2019/446
AUTHORS: Elham Parhizkar, Mohammad Hossein Nikravan, Sandra Zilles
HIGHLIGHT: We propose a new and easy to implement method for computing indirect trust, based on a simple prediction with expert advice strategy as is often used in online learning.

447, TITLE: Exploiting Interaction Links for Node Classification with Deep Graph Neural Networks
https://www.ijcai.org/proceedings/2019/447
AUTHORS: Hogun Park, Jennifer Neville
HIGHLIGHT: In this paper, we propose a neural network architecture that jointly captures both temporal and static interaction patterns, which we call Temporal-Static-Graph-Net (TSGNet).

448, TITLE: Improving Cross-lingual Entity Alignment via Optimal Transport
https://www.ijcai.org/proceedings/2019/448
AUTHORS: Shichao Pei, Lu Yu, Xiangliang Zhang
HIGHLIGHT: We propose a novel entity alignment framework (OTEA), which dually optimizes the entity-level loss and group-level loss via optimal transport theory.

449, TITLE: Fine-grained Event Categorization with Heterogeneous Graph Convolutional Networks

https://www.ijcai.org/proceedings/2019/449
AUTHORS: Hao Peng, Jianxin Li, Qiran Gong, Yangqiu Song, Yuanxin Ning, Kunfeng Lai, Philip S. Yu
HIGHLIGHT: In this paper, we design an event meta-schema to characterize the semantic relatedness of social events and build an event-based heterogeneous information network (HIN) integrating information from external knowledge base, and propose a novel Pairwise Popularity Graph Convolutional Network (PP-GCN) based fine-grained social event categorization model.

450, TITLE: A Practical Semi-Parametric Contextual Bandit
https://www.ijcai.org/proceedings/2019/450
AUTHORS: Yi Peng, Miao Xie, Jiahao Liu, Xuying Meng, Nan Li, Cheng Yang, Tao Yao, Rong Jin
HIGHLIGHT: In this paper, we formulate a novel Semi-Parametric Contextual Bandit Problem to relax this assumption.

451, TITLE: Graph Space Embedding
https://www.ijcai.org/proceedings/2019/451
AUTHORS: João Pereira, Albert K. Groen, Erik S. G. Stroes, Evgeni Levin
HIGHLIGHT: We propose the Graph Space Embedding (GSE), a technique that maps the input into a space where interactions are implicitly encoded, with little computations required.

452, TITLE: An Atari Model Zoo for Analyzing, Visualizing, and Comparing Deep Reinforcement Learning Agents
https://www.ijcai.org/proceedings/2019/452
AUTHORS: Felipe Petroski Such, Vashisht Madhavan, Rosanne Liu, Rui Wang, Pablo Samuel Castro, Yulun Li, Jiale Zhi, Ludwig Schubert, Marc G. Bellemare, Jeff Clune, Joel Lehman
HIGHLIGHT: This paper introduces the Atari Zoo framework, which contains models trained across benchmark Atari games, in an easy-to-use format, as well as code that implements common modes of analysis and connects such models to a popular neural network visualization library.

453, TITLE: Improving representation learning in autoencoders via multidimensional interpolation and dual regularizations
https://www.ijcai.org/proceedings/2019/453
AUTHORS: Sheng Qian, Guanyue Li, Wen-Ming Cao, Cheng Liu, Si Wu, Hau San Wong
HIGHLIGHT: Specifically, we propose the multidimensional interpolation to increase the capability of data interpolation by randomly setting interpolation coefficients for each dimension of latent representations.

454, TITLE: Scalable Bayesian Non-linear Matrix Completion
https://www.ijcai.org/proceedings/2019/454
AUTHORS: Xiangju Qin, Paul Blomstedt, Samuel Kaski
HIGHLIGHT: To solve the challenges regarding scalability and computation, we propose a data-parallel distributed computational approach with a restricted communication scheme.

455, TITLE: Noise-Resilient Similarity Preserving Network Embedding for Social Networks
https://www.ijcai.org/proceedings/2019/455
AUTHORS: Zhenyu Qiu, Wenbin Hu, Jia Wu, ZhongZheng Tang, Xiaohua Jia
HIGHLIGHT: In this paper, we aim to exploit node similarity to address the problem of social network embedding with noise and propose a node similarity preserving (NSP) embedding method.

456, TITLE: Fairwalk: Towards Fair Graph Embedding
https://www.ijcai.org/proceedings/2019/456
AUTHORS: Tahleen Rahman, Bartlomiej Surma, Michael Backes, Yang Zhang
HIGHLIGHT: We, therefore, propose a fairness-aware embedding method, namely Fairwalk, which extends node2vec.

457, TITLE: Automated Machine Learning with Monte-Carlo Tree Search
https://www.ijcai.org/proceedings/2019/457
AUTHORS: Herilalaina Rakotoarison, Marc Schoenauer, Michèle Sebag
HIGHLIGHT: A Monte-Carlo Tree Search Algorithm Selection and Configuration (Mosaic) approach is presented to tackle this mixed (combinatorial and continuous) expensive optimization problem on the structured search space of ML pipelines.

458, TITLE: Successor Options: An Option Discovery Framework for Reinforcement Learning
https://www.ijcai.org/proceedings/2019/458
AUTHORS: Rahul Ramesh, Manan Tomar, Balaraman Ravindran
HIGHLIGHT: In this work, we instead adopt a complementary approach, where we attempt to discover options that navigate to landmark states.

459, TITLE: Unifying the Stochastic and the Adversarial Bandits with Knapsack
https://www.ijcai.org/proceedings/2019/459
AUTHORS: Anshuka Rangi, Massimo Franceschetti, Long Tran-Thanh
HIGHLIGHT: We propose a novel algorithm EXP3.BwK and show that the expected regret of the algorithm is order optimal in the budget.

460, TITLE: Label distribution learning with label-specific features
https://www.ijcai.org/proceedings/2019/460
AUTHORS: Tingting Ren, Xiuyi Jia, Weiwei Li, Lei Chen, Zechao Li
HIGHLIGHT: In this paper, we propose a novel LDL algorithm by leveraging label-specific features.

461, TITLE: Label Distribution Learning with Label Correlations via Low-Rank Approximation
https://www.ijcai.org/proceedings/2019/461
AUTHORS: Tingting Ren, Xiuyi Jia, Weiwei Li, Shu Zhao
HIGHLIGHT: In this paper, we utilize both the global and local relevance among labels to provide more information for training model and propose a novel label distribution learning algorithm.

462, TITLE: Closed-Loop Memory GAN for Continual Learning
https://www.ijcai.org/proceedings/2019/462
AUTHORS: Amanda Rios, Laurent Itti
HIGHLIGHT: Here we propose a cumulative closed-loop memory replay GAN (CloGAN) provided with external regularization by a small memory unit selected for maximum sample diversity.

463, TITLE: Complementary Learning for Overcoming Catastrophic Forgetting Using Experience Replay
https://www.ijcai.org/proceedings/2019/463
AUTHORS: Mohammad Rostami, Soheil Kolouri, Praveen K. Pilly
HIGHLIGHT: Inspired from complementary learning systems theory, we address this challenge by learning a generative model that couples the current task to the past learned tasks through a discriminative embedding space.

464, TITLE: Discovering Regularities from Traditional Chinese Medicine Prescriptions via Bipartite Embedding Model
https://www.ijcai.org/proceedings/2019/464
AUTHORS: Chunyang Ruan, Jiangang Ma, Ye Wang, Yanchun Zhang, Yun Yang
HIGHLIGHT: In this paper, we address the specific problem of regularities discovery and propose a graph embedding based framework for regularities discovery for massive prescriptions.

465, TITLE: A Degeneracy Framework for Scalable Graph Autoencoders
https://www.ijcai.org/proceedings/2019/465
AUTHORS: Guillaume Salha, Romain Hennequin, Viet Anh Tran, Michalis Vazirgiannis
HIGHLIGHT: In this paper, we present a general framework to scale graph autoencoders (AE) and graph variational autoencoders (VAE).

466, TITLE: Deterministic Routing between Layout Abstractions for Multi-Scale Classification of Visually Rich Documents
https://www.ijcai.org/proceedings/2019/466
AUTHORS: Ritesh Sarkhel, Arnab Nandi
HIGHLIGHT: There are two major contributions of this work. First, we propose a spatial pyramid model to extract highly discriminative multi-scale feature descriptors from a visually rich document by leveraging the inherent hierarchy of its layout. Second, we propose a deterministic routing scheme for accelerating end-to-end inference by utilizing the spatial pyramid model.

467, TITLE: SynthNet: Learning to Synthesize Music End-to-End
https://www.ijcai.org/proceedings/2019/467
AUTHORS: Florin Schimbinschi, Christian Walder, Sarah M. Erfani, James Bailey
HIGHLIGHT: We propose a specific architecture based on WaveNet, a convolutional autoregressive generative model designed for text to speech.

468, TITLE: Weakly Supervised Multi-task Learning for Semantic Parsing
https://www.ijcai.org/proceedings/2019/468
AUTHORS: Bo Shao, Yeyun Gong, Junwei Bao, Jianshu Ji, Guihong Cao, Xiaola Lin, Nan Duan
HIGHLIGHT: We propose an effective method which substantially utilizes labeling information from other tasks to enhance the training of a semantic parser.

469, TITLE: Community Detection and Link Prediction via Cluster-driven Low-rank Matrix Completion
https://www.ijcai.org/proceedings/2019/469
AUTHORS: Junming Shao, Zhong Zhang, Zhongjing Yu, Jun Wang, Yi Zhao, Qinli Yang
HIGHLIGHT: In this paper, we propose a Cluster-driven Low-rank Matrix Completion (CLMC), for performing community detection and link prediction simultaneously in a unified framework.

470, TITLE: On the Effectiveness of Low Frequency Perturbations
https://www.ijcai.org/proceedings/2019/470
AUTHORS: Yash Sharma, Gavin Weiguang Ding, Marcus A. Brubaker
HIGHLIGHT: This questions the use of the L-inf-norm, in particular, as a distortion metric, and, in turn, suggests that explicitly considering the frequency space is promising for learning robust models which better align with human perception.

471, TITLE: A Part Power Set Model for Scale-Free Person Retrieval
https://www.ijcai.org/proceedings/2019/471
AUTHORS: Yunhang Shen, Rongrong Ji, Xiaopeng Hong, Feng Zheng, Xiaowei Guo, Yongjian Wu, Feiyue Huang
HIGHLIGHT: In this paper, to lighten the restriction of such fixed and coarse input alignment, an end-to-end part power set model with multi-scale features is proposed, which captures the discriminative parts of pedestrians from global to local, and from coarse to fine, enabling part-based scale-free person re-ID.

472, TITLE: Rapid Performance Gain through Active Model Reuse
https://www.ijcai.org/proceedings/2019/472
AUTHORS: Feng Shi, Yu-Feng Li
HIGHLIGHT: In this paper, we propose the AcMR (Active Model Reuse) method for the rapid performance improvement problem.

473, TITLE: A Convergence Analysis of Distributed SGD with Communication-Efficient Gradient Sparsification
https://www.ijcai.org/proceedings/2019/473
AUTHORS: Shaohuai Shi, Kaiyong Zhao, Qiang Wang, Zhenheng Tang, Xiaowen Chu
HIGHLIGHT: In this paper, we first provide theoretical proofs on the convergence of the gTop-k scheme for non-convex objective functions under certain analytic assumptions. We then derive the convergence rate of gTop-k S-SGD, which is at the same order as the vanilla mini-batch SGD.

474, TITLE: Quadruply Stochastic Gradients for Large Scale Nonlinear Semi-Supervised AUC Optimization
https://www.ijcai.org/proceedings/2019/474
AUTHORS: Wanli Shi, Bin Gu, Xiang Li, Xiang Geng, Heng Huang
HIGHLIGHT: To address this problem, in this paper, we propose a novel scalable quadruply stochastic gradient algorithm (QSG-S2AUC) for nonlinear semi-supervised AUC optimization.

475, TITLE: Soft Policy Gradient Method for Maximum Entropy Deep Reinforcement Learning
https://www.ijcai.org/proceedings/2019/475
AUTHORS: Wenjie Shi, Shiji Song, Cheng Wu
HIGHLIGHT: To ensure stable learning while eliminating the need of two separate critics for soft value functions, we leverage double sampling approach to making the soft Bellman equation tractable.

476, TITLE: Gradient Boosting with Piece-Wise Linear Regression Trees
https://www.ijcai.org/proceedings/2019/476
AUTHORS: Yu Shi, Jian Li, Zhize Li
HIGHLIGHT: In this paper, we show that both the accuracy and efficiency of GBDT can be further enhanced by using more complex base learners.

477, TITLE: The Pupil Has Become the Master: Teacher-Student Model-Based Word Embedding Distillation with Ensemble Learning
https://www.ijcai.org/proceedings/2019/477
AUTHORS: Bonggun Shin, Hao Yang, Jinho D. Choi
HIGHLIGHT: This paper touches the core of neural models in NLP, word embeddings, and presents an embedding distillation framework that remarkably reduces the dimension of word embeddings without compromising accuracy.

478, TITLE: A Principled Approach for Learning Task Similarity in Multitask Learning
https://www.ijcai.org/proceedings/2019/478
AUTHORS: Changjian Shui, Mahdieh Abbasi, Louis-Émile Robitaille, Boyu Wang, Christian Gagné
HIGHLIGHT: In this paper, we give a different perspective from a theoretical point of view to understand this practice.

479, TITLE: Structure Learning for Safe Policy Improvement
https://www.ijcai.org/proceedings/2019/479
AUTHORS: Thiago D. Simão, Matthijs T. J. Spaan
HIGHLIGHT: To overcome these limitations we enhance a Factored SPI (FSPI) algorithm with different structure learning methods.

480, TITLE: Play and Prune: Adaptive Filter Pruning for Deep Model Compression
https://www.ijcai.org/proceedings/2019/480
AUTHORS: Pravendra Singh, Vinay Kumar Verma, Piyush Rai, Vinay P. Namboodiri
HIGHLIGHT: We present a new min-max framework for filter-level pruning of CNNs.

481, TITLE: Solving Continual Combinatorial Selection via Deep Reinforcement Learning
https://www.ijcai.org/proceedings/2019/481
AUTHORS: Hyungseok Song, Hyeryung Jang, Hai H. Tran, Se-eun Yoon, Kyunghwan Son, Donggyu Yun, Hyoju Chung, Yung Yi
HIGHLIGHT: In this paper, we present a deep RL algorithm to solve this issue by adopting the following key ideas.

482, TITLE: Playing FPS Games With Environment-Aware Hierarchical Reinforcement Learning
https://www.ijcai.org/proceedings/2019/482
AUTHORS: Shihong Song, Jiayi Weng, Hang Su, Dong Yan, Haosheng Zou, Jun Zhu
HIGHLIGHT: Specifically, we present a hierarchical model that works in a manager-worker fashion over two levels of hierarchy.

483, TITLE: Parallel Wasserstein Generative Adversarial Nets with Multiple Discriminators
https://www.ijcai.org/proceedings/2019/483
AUTHORS: Yuxin Su, Shenglin Zhao, Xixian Chen, Irwin King, Michael Lyu
HIGHLIGHT: In this paper, we solve the computation cost problem by speeding up the Wasserstein GANs from a well-designed communication efficient parallel architecture.

484, TITLE: Finding Statistically Significant Interactions between Continuous Features
https://www.ijcai.org/proceedings/2019/484
AUTHORS: Mahito Sugiyama, Karsten Borgwardt
HIGHLIGHT: We propose an algorithm which overcomes the combinatorial explosion of the search space of higher-order interactions by deriving a lower bound on the p-value for each interaction, which enables us to massively prune interactions that can never reach significance and to thereby gain more statistical power.

485, TITLE: Fast and Robust Multi-View Multi-Task Learning via Group Sparsity
https://www.ijcai.org/proceedings/2019/485
AUTHORS: Lu Sun, Canh Hao Nguyen, Hiroshi Mamitsuka
HIGHLIGHT: To overcome these limitations, we propose a robust method with joint group-sparsity by decomposing feature parameters into a sum of two components,in which one saves relevant features (for Problem 1) and flexible view consistency (for Problem 2),while the other detects task-view outliers (for Problem 3).

486, TITLE: Multiplicative Sparse Feature Decomposition for Efficient Multi-View Multi-Task Learning
https://www.ijcai.org/proceedings/2019/486
AUTHORS: Lu Sun, Canh Hao Nguyen, Hiroshi Mamitsuka
HIGHLIGHT: In this paper, we propose a new method to directly handle these challenges based on multiplicative sparse feature decomposition.

487, TITLE: Adversarial Imitation Learning from Incomplete Demonstrations
https://www.ijcai.org/proceedings/2019/487
AUTHORS: Mingfei Sun, Xiaojuan Ma
HIGHLIGHT: In this paper, we propose a novel algorithm called Action-Guided Adversarial Imitation Learning (AGAIL) that learns a pol- icy from demonstrations with incomplete action sequences, i.e., incomplete demonstrations.

488, TITLE: Heavy-ball Algorithms Always Escape Saddle Points
https://www.ijcai.org/proceedings/2019/488
AUTHORS: Tao Sun, Dongsheng Li, Zhe Quan, Hao Jiang, Shengguo Li, Yong Dou

HIGHLIGHT: In this paper, we answer a question: can the nonconvex heavy-ball algorithms with random initialization avoid saddle points?

489, TITLE: MEGAN: A Generative Adversarial Network for Multi-View Network Embedding
https://www.ijcai.org/proceedings/2019/489
AUTHORS: Yiwei Sun, Suhang Wang, Tsung-Yu Hsieh, Xianfeng Tang, Vasant Honavar
HIGHLIGHT: Against this background, we consider the multi-view network representation learning problem, i.e., the problem of constructing low-dimensional information preserving embeddings of multi-view networks.

490, TITLE: Metric Learning on Healthcare Data with Incomplete Modalities
https://www.ijcai.org/proceedings/2019/490
AUTHORS: Qiuling Suo, Weida Zhong, Fenglong Ma, Ye Yuan, Jing Gao, Aidong Zhang
HIGHLIGHT: To tackle the aforementioned challenges, we propose a metric learning framework to perform missing modality completion and multi-modal metric learning simultaneously.

491, TITLE: HMLasso: Lasso with High Missing Rate
https://www.ijcai.org/proceedings/2019/491
AUTHORS: Masaaki Takada, Hironori Fujisawa, Takeichiro Nishikawa
HIGHLIGHT: In this paper, we propose a novel Lasso-type regression method for high-dimensional data with high missing rates.

492, TITLE: Deeply-learned Hybrid Representations for Facial Age Estimation
https://www.ijcai.org/proceedings/2019/492
AUTHORS: Zichang Tan, Yang Yang, Jun Wan, Guodong Guo, Stan Z. Li
HIGHLIGHT: In this paper, we propose a novel unified network named Deep Hybrid-Aligned Architecture for facial age estimation.

493, TITLE: AugBoost: Gradient Boosting Enhanced with Step-Wise Feature Augmentation
https://www.ijcai.org/proceedings/2019/493
AUTHORS: Philip Tannor, Lior Rokach
HIGHLIGHT: In this paper we introduce a method for obtaining better results, by augmenting the features in the dataset between the iterations of GBDT.

494, TITLE: Adversarial Graph Embedding for Ensemble Clustering
https://www.ijcai.org/proceedings/2019/494
AUTHORS: Zhiqiang Tao, Hongfu Liu, Jun Li, Zhaowen Wang, Yun Fu
HIGHLIGHT: In this paper, we propose a novel Adversarial Graph Auto-Encoders (AGAE) model to incorporate ensemble clustering into a deep graph embedding process.

495, TITLE: Hierarchical Inter-Attention Network for Document Classification with Multi-Task Learning
https://www.ijcai.org/proceedings/2019/495
AUTHORS: Bing Tian, Yong Zhang, Jin Wang, Chunxiao Xing
HIGHLIGHT: In this paper, we propose a multi-task learning framework to jointly train multiple related document classification tasks.

496, TITLE: Image Captioning with Compositional Neural Module Networks
https://www.ijcai.org/proceedings/2019/496
AUTHORS: Junjiao Tian, Jean Oh
HIGHLIGHT: Inspired by the idea of the compositional neural module networks in the visual question answering task, we introduce a hierarchical framework for image captioning that explores both compositionality and sequentiality of natural language.

497, TITLE: Imitation Learning from Video by Leveraging Proprioception
https://www.ijcai.org/proceedings/2019/497
AUTHORS: Faraz Torabi, Garrett Warnell, Peter Stone
HIGHLIGHT: Motivated by the fact that agents often also have access to their own internal states (i.e., proprioception), we propose and study an IfO algorithm that leverages this information in the policy learning process.

498, TITLE: Exchangeability and Kernel Invariance in Trained MLPs
https://www.ijcai.org/proceedings/2019/498
AUTHORS: Russell Tsuchida, Fred Roosta, Marcus Gallagher

HIGHLIGHT:　　　　　We show the sense in which the weights in MLPs are exchangeable.

499, TITLE:　　　　　Deeper Connections between Neural Networks and Gaussian Processes Speed-up Active Learning
https://www.ijcai.org/proceedings/2019/499
AUTHORS:　　　　　Evgenii Tsymbalov, Sergei Makarychev, Alexander Shapeev, Maxim Panov
HIGHLIGHT:　　　　　In this work, we propose to approximate Bayesian neural networks (BNN) by Gaussian processes (GP), which allows us to update the uncertainty estimates of predictions efficiently without retraining the neural network while avoiding overconfident uncertainty prediction for out-of-sample points.

500, TITLE:　　　　　Object Detection based Deep Unsupervised Hashing
https://www.ijcai.org/proceedings/2019/500
AUTHORS:　　　　　Rong-Cheng Tu, Xian-Ling Mao, Bo-Si Feng, Shu-ying Yu
HIGHLIGHT:　　　　　Thus, in this paper, we propose a novel Object Detection based Deep Unsupervised Hashing method (ODDUH).

501, TITLE:　　　　　Ensemble-based Ultrahigh-dimensional Variable Screening
https://www.ijcai.org/proceedings/2019/501
AUTHORS:　　　　　Wei Tu, Dong Yang, Linglong Kong, Menglu Che, Qian Shi, Guodong Li, Guangjian Tian
HIGHLIGHT:　　　　　In this paper, we introduce a general ensemble-based framework to efficiently combine results from multiple variable screening methods.

502, TITLE:　　　　　Learning to Interpret Satellite Images using Wikipedia
https://www.ijcai.org/proceedings/2019/502
AUTHORS:　　　　　Burak Uzkent, Evan Sheehan, Chenlin Meng, Zhongyi Tang, Marshall Burke, David Lobell, Stefano Ermon
HIGHLIGHT:　　　　　To overcome this limitation, we construct a novel dataset called WikiSatNet by pairing geo-referenced Wikipedia articles with satellite imagery of their corresponding locations. We then propose two strategies to learn representations of satellite images by predicting properties of the corresponding articles from the images.

503, TITLE:　　　　　DeepCU: Integrating both Common and Unique Latent Information for Multimodal Sentiment Analysis
https://www.ijcai.org/proceedings/2019/503
AUTHORS:　　　　　Sunny Verma, Chen Wang, Liming Zhu, Wei Liu
HIGHLIGHT:　　　　　In this research, we first propose a novel deep architecture to extract the common information from the multi-mode representations. Furthermore, we propose unique networks to obtain the modality-specific information that enhances the generalization performance of our multimodal system. Finally, we integrate these two aspects of information via a fusion layer and propose a novel multimodal data fusion architecture, which we call DeepCU (Deep network with both Common and Unique latent information).

504, TITLE:　　　　　Interpolation Consistency Training for Semi-supervised Learning
https://www.ijcai.org/proceedings/2019/504
AUTHORS:　　　　　Vikas Verma, Alex Lamb, Juho Kannala, Yoshua Bengio, David Lopez-Paz
HIGHLIGHT:　　　　　We introduce Interpolation Consistency Training (ICT), a simple and computation efficient algorithm for training Deep Neural Networks in the semi-supervised learning paradigm.

505, TITLE:　　　　　Sharing Experience in Multitask Reinforcement Learning
https://www.ijcai.org/proceedings/2019/505
AUTHORS:　　　　　Tung-Long Vuong, Do-Van Nguyen, Tai-Long Nguyen, Cong-Minh Bui, Hai-Dang Kieu, Viet-Cuong Ta, Quoc-Long Tran, Thanh-Ha Le
HIGHLIGHT:　　　　　In this paper, we propose a Sharing Experience Framework (SEF) for simultaneously training of multiple tasks.

506, TITLE:　　　　　Planning with Expectation Models
https://www.ijcai.org/proceedings/2019/506
AUTHORS:　　　　　Yi Wan, Muhammad Zaheer, Adam White, Martha White, Richard S. Sutton
HIGHLIGHT:　　　　　In this paper, we propose a sound way of using approximate expectation models for MBRL.

507, TITLE:　　　　　Recurrent Existence Determination Through Policy Optimization
https://www.ijcai.org/proceedings/2019/507
AUTHORS:　　　　　Baoxiang Wang
HIGHLIGHT:　　　　　Our algorithm employs a novel k-maximum aggregation layer and a new reward mechanism to address the issue of delayed rewards, which would have caused the instability of the training process.

508, TITLE:　　　　　Boundary Perception Guidance: A Scribble-Supervised Semantic Segmentation Approach

https://www.ijcai.org/proceedings/2019/508
AUTHORS: Bin Wang, Guojun Qi, Sheng Tang, Tianzhu Zhang, Yunchao Wei, Linghui Li, Yongdong Zhang
HIGHLIGHT: To fully explore the limited pixel-level annotations from scribbles, we present a novel Boundary Perception Guidance (BPG) approach, which consists of two basic components, i.e., prediction refinement and boundary regression.

509, TITLE: Attributed Graph Clustering: A Deep Attentional Embedding Approach
https://www.ijcai.org/proceedings/2019/509
AUTHORS: Chun Wang, Shirui Pan, Ruiqi Hu, Guodong Long, Jing Jiang, Chengqi Zhang
HIGHLIGHT: In this paper, we propose a goal-directed deep learning approach, Deep Attentional Embedded Graph Clustering (DAEGC for short).

510, TITLE: Spectral Perturbation Meets Incomplete Multi-view Data
https://www.ijcai.org/proceedings/2019/510
AUTHORS: Hao Wang, Linlin Zong, Bing Liu, Yan Yang, Wei Zhou
HIGHLIGHT: In this work, we show a strong link between perturbation risk bounds and incomplete multi-view clustering.

511, TITLE: Measuring Structural Similarities in Finite MDPs
https://www.ijcai.org/proceedings/2019/511
AUTHORS: Hao Wang, Shaokang Dong, Ling Shao
HIGHLIGHT: In this paper, we investigate the structural similarities within a finite Markov decision process (MDP).

512, TITLE: Discriminative and Correlative Partial Multi-Label Learning
https://www.ijcai.org/proceedings/2019/512
AUTHORS: Haobo Wang, Weiwei Liu, Yang Zhao, Chen Zhang, Tianlei Hu, Gang Chen
HIGHLIGHT: To fill this gap, a two-stage DiscRiminative and correlAtive partial Multi-label leArning (DRAMA) algorithm is presented in this work.

513, TITLE: DMRAN:A Hierarchical Fine-Grained Attention-Based Network for Recommendation
https://www.ijcai.org/proceedings/2019/513
AUTHORS: Huizhao Wang, Guanfeng Liu, An Liu, Zhixu Li, Kai Zheng
HIGHLIGHT: In this paper, we propose a Double Most Relevant Attention Network (DMRAN) that contains two layers, i.e., Item level Attention and Feature Level Self- attention, which are to pick out the most relevant items from the sequence of user's historical behaviors, and extract the most relevant aspects of relevant items, respectively.

514, TITLE: CLVSA: A Convolutional LSTM Based Variational Sequence-to-Sequence Model with Attention for Predicting Trends of Financial Markets
https://www.ijcai.org/proceedings/2019/514
AUTHORS: Jia Wang, Tong Sun, Benyuan Liu, Yu Cao, Hongwei Zhu
HIGHLIGHT: Inspired by stochastic recurrent models that successfully capture variability observed in natural sequential data such as speech and video, we propose CLVSA, a hybrid model that consists of stochastic recurrent networks, the sequence-to-sequence architecture, the self- and inter-attention mechanism, and convolutional LSTM units to capture variationally underlying features in raw financial trading data.

515, TITLE: Classification with Label Distribution Learning
https://www.ijcai.org/proceedings/2019/515
AUTHORS: Jing Wang, Xin Geng
HIGHLIGHT: To solve the inconsistency, we propose in this paper a new Label Distribution Learning algorithm for Classification (LDL4C).

516, TITLE: Attributed Subspace Clustering
https://www.ijcai.org/proceedings/2019/516
AUTHORS: Jing Wang, Linchuan Xu, Feng Tian, Atsushi Suzuki, Changqing Zhang, Kenji Yamanishi
HIGHLIGHT: Therefore, we propose an innovative model called attributed subspace clustering (ASC).

517, TITLE: Deep Cascade Generation on Point Sets
https://www.ijcai.org/proceedings/2019/517
AUTHORS: Kaiqi Wang, Ke Chen, Kui Jia
HIGHLIGHT: For benefiting from its simple structure yet utilizing rich neighborhood information across points, this paper proposes a two-stage cascade model on point sets.

518, TITLE:		Discrete Binary Coding based Label Distribution Learning
https://www.ijcai.org/proceedings/2019/518
AUTHORS:		Ke Wang, Xin Geng
HIGHLIGHT:		In this paper, we propose a novel LDL method to address this issue, termed Discrete Binary Coding based Label Distribution Learning (DBC-LDL).

519, TITLE:		Differentially Private Iterative Gradient Hard Thresholding for Sparse Learning
https://www.ijcai.org/proceedings/2019/519
AUTHORS:		Lingxiao Wang, Quanquan Gu
HIGHLIGHT:		We propose a generic differentially private iterative gradient hard threshoding algorithm with a linear convergence rate and strong utility guarantee.

520, TITLE:		MUSICAL: Multi-Scale Image Contextual Attention Learning for Inpainting
https://www.ijcai.org/proceedings/2019/520
AUTHORS:		Ning Wang, Jingyuan Li, Lefei Zhang, Bo Du
HIGHLIGHT:		To this end, in this study, we propose to use a multi-scale image contextual attention learning (MUSICAL) strategy that helps to flexibly handle richer background information while avoid to misuse of it.

521, TITLE:		Partial Label Learning with Unlabeled Data
https://www.ijcai.org/proceedings/2019/521
AUTHORS:		Qian-Wei Wang, Yu-Feng Li, Zhi-Hua Zhou
HIGHLIGHT:		In this paper, we propose the SSPL method to address this problem.

522, TITLE:		Heterogeneous Graph Matching Networks for Unknown Malware Detection
https://www.ijcai.org/proceedings/2019/522
AUTHORS:		Shen Wang, Zhengzhang Chen, Xiao Yu, Ding Li, Jingchao Ni, Lu-An Tang, Jiaping Gui, Zhichun Li, Haifeng Chen, Philip S. Yu
HIGHLIGHT:		To address the limitations of existing techniques, we propose MatchGNet, a heterogeneous Graph Matching Network model to learn the graph representation and similarity metric simultaneously based on the invariant graph modeling of the program's execution behaviors.

523, TITLE:		Modeling Multi-Purpose Sessions for Next-Item Recommendations via Mixture-Channel Purpose Routing Networks
https://www.ijcai.org/proceedings/2019/523
AUTHORS:		Shoujin Wang, Liang Hu, Yan Wang, Quan Z. Sheng, Mehmet Orgun, Longbing Cao
HIGHLIGHT:		Therefore, we propose a mixture-channel model to accommodate the multi-purpose item subsets for more precisely representing a session.

524, TITLE:		Multi-view Clustering via Late Fusion Alignment Maximization
https://www.ijcai.org/proceedings/2019/524
AUTHORS:		Siwei Wang, Xinwang Liu, En Zhu, Chang Tang, Jiyuan Liu, Jingtao Hu, Jingyuan Xia, Jianping Yin
HIGHLIGHT:		In this paper, we theoretically uncover the connection between existing k-means clustering and the alignment between base partitions and consensus partition.

525, TITLE:		COP: Customized Deep Model Compression via Regularized Correlation-Based Filter-Level Pruning
https://www.ijcai.org/proceedings/2019/525
AUTHORS:		Wenxiao Wang, Cong Fu, Jishun Guo, Deng Cai, Xiaofei He
HIGHLIGHT:		To address the above problems, we develop a novel algorithm named as COP (correlation-based pruning), which can detect the redundant filters efficiently.

526, TITLE:		Position Focused Attention Network for Image-Text Matching
https://www.ijcai.org/proceedings/2019/526
AUTHORS:		Yaxiong Wang, Hao Yang, Xueming Qian, Lin Ma, Jing Lu, Biao Li, Xin Fan
HIGHLIGHT:		In this paper, we propose a novel position focused attention network (PFAN) to investigate the relation between the visual and the textual views.

527, TITLE:		Tag2Gauss: Learning Tag Representations via Gaussian Distribution in Tagged Networks
https://www.ijcai.org/proceedings/2019/527
AUTHORS:		Yun Wang, Lun Du, Guojie Song, Xiaojun Ma, Lichen Jin, Wei Lin, Fei Sun
HIGHLIGHT:		In this paper, we propose a tag representation learning model which takes tag-related node interaction into consideration, named Tag2Gauss.

528, TITLE:		Weak Supervision Enhanced Generative Network for Question Generation
https://www.ijcai.org/proceedings/2019/528
AUTHORS:		Yutong Wang, Jiyuan Zheng, Qijiong Liu, Zhou Zhao, Jun Xiao, Yueting Zhuang
HIGHLIGHT:		To address this problem, we propose the Weakly Supervision Enhanced Generative Network (WeGen) which automatically discovers relevant features of the passage given the answer span in a weakly supervised manner to improve the quality of generated questions.

529, TITLE:		Unified Embedding Model over Heterogeneous Information Network for Personalized Recommendation
https://www.ijcai.org/proceedings/2019/529
AUTHORS:		Zekai Wang, Hongzhi Liu, Yingpeng Du, Zhonghai Wu, Xing Zhang
HIGHLIGHT:		To address these problems, we propose a HIN based unified embedding model for recommendation, called HueRec.

530, TITLE:		Interactive Reinforcement Learning with Dynamic Reuse of Prior Knowledge from Human and Agent Demonstrations
https://www.ijcai.org/proceedings/2019/530
AUTHORS:		Zhaodong Wang, Matthew E. Taylor
HIGHLIGHT:		This paper introduces the Dynamic Reuse of Prior (DRoP) algorithm, which combines the offline knowledge (demonstrations recorded before learning) with online confidence-based performance analysis.

531, TITLE:		Hierarchical Diffusion Attention Network
https://www.ijcai.org/proceedings/2019/531
AUTHORS:		Zhitao Wang, Wenjie Li
HIGHLIGHT:		In this paper, we propose a hierarchical diffusion attention network (HiDAN), which adopts a non-sequential framework and two-level attention mechanisms, for diffusion prediction.

532, TITLE:		Learning Multi-Objective Rewards and User Utility Function in Contextual Bandits for Personalized Ranking
https://www.ijcai.org/proceedings/2019/532
AUTHORS:		Nirandika Wanigasekara, Yuxuan Liang, Siong Thye Goh, Ye Liu, Joseph Jay Williams, David S. Rosenblum
HIGHLIGHT:		To solve the MOCR-B problem, we present a novel algorithm, named Multi-Objective Utility-Upper Confidence Bound (MOU-UCB).

533, TITLE:		Learning for Tail Label Data: A Label-Specific Feature Approach
https://www.ijcai.org/proceedings/2019/533
AUTHORS:		Tong Wei, Wei-Wei Tu, Yu-Feng Li
HIGHLIGHT:		In this paper, we propose a novel method for the tail label learning problem.

534, TITLE:		Bayesian Uncertainty Matching for Unsupervised Domain Adaptation
https://www.ijcai.org/proceedings/2019/534
AUTHORS:		Jun Wen, Nenggan Zheng, Junsong Yuan, Zhefeng Gong, Changyou Chen
HIGHLIGHT:		To alleviate this issue, we propose an approximate joint distribution matching scheme by exploiting prediction uncertainty.

535, TITLE:		RobustTrend: A Huber Loss with a Combined First and Second Order Difference Regularization for Time Series Trend Filtering
https://www.ijcai.org/proceedings/2019/535
AUTHORS:		Qingsong Wen, Jingkun Gao, Xiaomin Song, Liang Sun, Jian Tan
HIGHLIGHT:		To deal with these challenges, we propose a robust trend filtering algorithm based on robust statistics and sparse learning.

536, TITLE:		Neural News Recommendation with Attentive Multi-View Learning
https://www.ijcai.org/proceedings/2019/536
AUTHORS:		Chuhan Wu, Fangzhao Wu, Mingxiao An, Jianqiang Huang, Yongfeng Huang, Xing Xie
HIGHLIGHT:		In this paper we propose a neural news recommendation approach which can learn informative representations of users and news by exploiting different kinds of news information.

537, TITLE:		PD-GAN: Adversarial Learning for Personalized Diversity-Promoting Recommendation
https://www.ijcai.org/proceedings/2019/537
AUTHORS:		Qiong Wu, Yong Liu, Chunyan Miao, Binqiang Zhao, Yin Zhao, Lu Guan

HIGHLIGHT: This paper proposes Personalized Diversity-promoting GAN (PD-GAN), a novel recommendation model to generate diverse, yet relevant recommendations.

538, TITLE: Feature Evolution Based Multi-Task Learning for Collaborative Filtering with Social Trust
https://www.ijcai.org/proceedings/2019/538
AUTHORS: Qitian Wu, Lei Jiang, Xiaofeng Gao, Xiaochun Yang, Guihai Chen
HIGHLIGHT: In this paper, we propose TrustEV and take the view of multi-task learning to unite collaborative filtering for recommendation and network embedding for user trust.

539, TITLE: Multi-View Multi-Label Learning with View-Specific Information Extraction
https://www.ijcai.org/proceedings/2019/539
AUTHORS: Xuan Wu, Qing-Guo Chen, Yao Hu, Dengbao Wang, Xiaodong Chang, Xiaobo Wang, Min-Ling Zhang
HIGHLIGHT: In this paper, a novel multi-view multi-label learning approach named SIMM is proposed which leverages shared subspace exploitation and view-specific information extraction.

540, TITLE: Trend-Aware Tensor Factorization for Job Skill Demand Analysis
https://www.ijcai.org/proceedings/2019/540
AUTHORS: Xunxian Wu, Tong Xu, Hengshu Zhu, Le Zhang, Enhong Chen, Hui Xiong
HIGHLIGHT: To address these challenges, in this paper, we propose a trend-aware approach for fine-grained skill demand analysis.

541, TITLE: Graph Convolutional Networks on User Mobility Heterogeneous Graphs for Social Relationship Inference
https://www.ijcai.org/proceedings/2019/541
AUTHORS: Yongji Wu, Defu Lian, Shuowei Jin, Enhong Chen
HIGHLIGHT: We propose a novel model that utilizes Graph Convolutional Networks (GCNs) to learn user embeddings on the User Mobility Heterogeneous Graph in an unsupervised manner.

542, TITLE: BPAM: Recommendation Based on BP Neural Network with Attention Mechanism
https://www.ijcai.org/proceedings/2019/542
AUTHORS: Wu-Dong Xi, Ling Huang, Chang-Dong Wang, Yin-Yu Zheng, Jianhuang Lai
HIGHLIGHT: To tackle these problems, we propose a novel recommendation algorithm based on Back Propagation (BP) neural network with Attention Mechanism (BPAM).

543, TITLE: Incremental Few-Shot Learning for Pedestrian Attribute Recognition
https://www.ijcai.org/proceedings/2019/543
AUTHORS: Liuyu Xiang, Xiaoming Jin, Guiguang Ding, Jungong Han, Leida Li
HIGHLIGHT: In this work, we present a meta learning based method to address this issue.

544, TITLE: Reparameterizable Subset Sampling via Continuous Relaxations
https://www.ijcai.org/proceedings/2019/544
AUTHORS: Sang Michael Xie, Stefano Ermon
HIGHLIGHT: We use this approach to sample subsets of features in an instance-wise feature selection task for model interpretability, subsets of neighbors to implement a deep stochastic k-nearest neighbors model, and sub-sequences of neighbors to implement parametric t-SNE by directly comparing the identities of local neighbors.

545, TITLE: CFM: Convolutional Factorization Machines for Context-Aware Recommendation
https://www.ijcai.org/proceedings/2019/545
AUTHORS: Xin Xin, Bo Chen, Xiangnan He, Dong Wang, Yue Ding, Joemon Jose
HIGHLIGHT: In this paper, we propose Convolutional Factorization Machine (CFM) to address above limitations.

546, TITLE: Adversarial Incomplete Multi-view Clustering
https://www.ijcai.org/proceedings/2019/546
AUTHORS: Cai Xu, Ziyu Guan, Wei Zhao, Hongchang Wu, Yunfei Niu, Beilei Ling
HIGHLIGHT: To eliminate all these drawbacks, in this work we present an Adversarial Incomplete Multi-view Clustering (AIMC) method.

547, TITLE: Graph Contextualized Self-Attention Network for Session-based Recommendation
https://www.ijcai.org/proceedings/2019/547
AUTHORS: Chengfeng Xu, Pengpeng Zhao, Yanchi Liu, Victor S. Sheng, Jiajie Xu, Fuzhen Zhuang, Junhua Fang, Xiaofang Zhou

HIGHLIGHT: In this paper, we propose a graph contextualized self-attention model (GC-SAN), which utilizes both graph neural network and self-attention mechanism, for session-based recommendation.

548, TITLE: Spatio-Temporal Attentive RNN for Node Classification in Temporal Attributed Graphs
https://www.ijcai.org/proceedings/2019/548
AUTHORS: Dongkuan Xu, Wei Cheng, Dongsheng Luo, Xiao Liu, Xiang Zhang
HIGHLIGHT: In this paper, we propose STAR, a spatio-temporal attentive recurrent network model, to deal with the above challenges.

549, TITLE: Learning a Generative Model for Fusing Infrared and Visible Images via Conditional Generative Adversarial Network with Dual Discriminators
https://www.ijcai.org/proceedings/2019/549
AUTHORS: Han Xu, Pengwei Liang, Wei Yu, Junjun Jiang, Jiayi Ma
HIGHLIGHT: In this paper, we propose a new end-to-end model, called dual-discriminator conditional generative adversarial network (DDcGAN), for fusing infrared and visible images of different resolutions.

550, TITLE: Topology Attack and Defense for Graph Neural Networks: An Optimization Perspective
https://www.ijcai.org/proceedings/2019/550
AUTHORS: Kaidi Xu, Hongge Chen, Sijia Liu, Pin-Yu Chen, Tsui-Wei Weng, Mingyi Hong, Xue Lin
HIGHLIGHT: Moreover, leveraging our gradient-based attack, we propose the first optimization-based adversarial training for GNNs.

551, TITLE: MR-GNN: Multi-Resolution and Dual Graph Neural Network for Predicting Structured Entity Interactions
https://www.ijcai.org/proceedings/2019/551
AUTHORS: Nuo Xu, Pinghui Wang, Long Chen, Jing Tao, Junzhou Zhao
HIGHLIGHT: To resolve these problems, we present {\em MR-GNN}, an end-to-end graph neural network with the following features: i) it uses a multi-resolution based architecture to extract node features from different neighborhoods of each node, and, ii) it uses dual graph-state long short-term memory networks (LSTMs) to summarize local features of each graph and extracts the interaction features between pairwise graphs.

552, TITLE: Commit Message Generation for Source Code Changes
https://www.ijcai.org/proceedings/2019/552
AUTHORS: Shengbin Xu, Yuan Yao, Feng Xu, Tianxiao Gu, Hanghang Tong, Jian Lu
HIGHLIGHT: In this paper, we propose CoDiSum to address the above two limitations.

553, TITLE: Latent Semantics Encoding for Label Distribution Learning
https://www.ijcai.org/proceedings/2019/553
AUTHORS: Suping Xu, Lin Shang, Furao Shen
HIGHLIGHT: In this paper, we propose a novel algorithm, i.e., Latent Semantics Encoding for Label Distribution Learning (LSE-LDL), which learns the label distribution and implements feature selection simultaneously under the guidance of latent semantics.

554, TITLE: Learning Image-Specific Attributes by Hyperbolic Neighborhood Graph Propagation
https://www.ijcai.org/proceedings/2019/554
AUTHORS: Xiaofeng Xu, Ivor W. Tsang, Xiaofeng Cao, Ruiheng Zhang, Chuancai Liu
HIGHLIGHT: In this paper, we propose to learn image-specific attributes by graph-based attribute propagation.

555, TITLE: Zero-shot Metric Learning
https://www.ijcai.org/proceedings/2019/555
AUTHORS: Xinyi Xu, Huanhuan Cao, Yanhua Yang, Erkun Yang, Cheng Deng
HIGHLIGHT: In this work, we tackle the zero-shot metric learning problem and propose a novel method abbreviated as ZSML, with the purpose to learn a distance metric that measures the similarity of unseen categories (even unseen datasets).

556, TITLE: On the Convergence of (Stochastic) Gradient Descent with Extrapolation for Non-Convex Minimization
https://www.ijcai.org/proceedings/2019/556
AUTHORS: Yi Xu, Zhuoning Yuan, Sen Yang, Rong Jin, Tianbao Yang
HIGHLIGHT: In this paper, we analyze gradient descent and stochastic gradient descent with extrapolation for finding an approximate first-order stationary point in smooth non-convex optimization problems.

557, TITLE: Transfer of Temporal Logic Formulas in Reinforcement Learning

https://www.ijcai.org/proceedings/2019/557
AUTHORS: Zhe Xu, Ufuk Topcu
HIGHLIGHT: We study the transfer of knowledge between tasks in which the timing of the events matters.

558, TITLE: Deep Spectral Kernel Learning
https://www.ijcai.org/proceedings/2019/558
AUTHORS: Hui Xue, Zheng-Fan Wu, Wei-Xiang Sun
HIGHLIGHT: In this paper, we propose a novel deep spectral kernel network (DSKN) to naturally integrate non-stationary and non-monotonic spectral kernels into elegant deep architectures in an interpretable way, which can be further generalized to cover most kernels.

559, TITLE: Deep Correlated Predictive Subspace Learning for Incomplete Multi-View Semi-Supervised Classification
https://www.ijcai.org/proceedings/2019/559
AUTHORS: Zhe Xue, Junping Du, Dawei Du, Wenqi Ren, Siwei Lyu
HIGHLIGHT: To address this problem, we propose a Deep Correlated Predictive Subspace Learning (DCPSL) method for incomplete multi-view semi-supervised classification.

560, TITLE: Multi-scale Information Diffusion Prediction with Reinforced Recurrent Networks
https://www.ijcai.org/proceedings/2019/560
AUTHORS: Cheng Yang, Jian Tang, Maosong Sun, Ganqu Cui, Zhiyuan Liu
HIGHLIGHT: In this paper, we propose a novel multi-scale diffusion prediction model based on reinforcement learning (RL).

561, TITLE: Learning Strictly Orthogonal p-Order Nonnegative Laplacian Embedding via Smoothed Iterative Reweighted Method
https://www.ijcai.org/proceedings/2019/561
AUTHORS: Haoxuan Yang, Kai Liu, Hua Wang, Feiping Nie
HIGHLIGHT: In this work, we study LE that uses the p-th order of the L2-norm distances and satisfies both orthogonal and nonnegative constraints.

562, TITLE: Low-Bit Quantization for Attributed Network Representation Learning
https://www.ijcai.org/proceedings/2019/562
AUTHORS: Hong Yang, Shirui Pan, Ling Chen, Chuan Zhou, Peng Zhang
HIGHLIGHT: To this end, we present a new Low-Bit Quantization for Attributed Network Representation Learning model (LQANR for short) that can learn compact node representations with low bitwidth values while preserving high representation accuracy.

563, TITLE: Topology Optimization based Graph Convolutional Network
https://www.ijcai.org/proceedings/2019/563
AUTHORS: Liang Yang, Zesheng Kang, Xiaochun Cao, Di Jin, Bo Yang, Yuanfang Guo
HIGHLIGHT: In this paper, we propose a novel Topology Optimization based Graph Convolutional Networks (TO-GCN) to fully utilize the potential information by jointly refining the network topology and learning the parameters of the FCN.

564, TITLE: Dual Self-Paced Graph Convolutional Network: Towards Reducing Attribute Distortions Induced by Topology
https://www.ijcai.org/proceedings/2019/564
AUTHORS: Liang Yang, Zhiyang Chen, Junhua Gu, Yuanfang Guo
HIGHLIGHT: To reduce the distortions induced by the topology while exploit more potentials of the attribute information, Dual Self-Paced Graph Convolutional Network (DSP-GCN) is proposed in this paper.

565, TITLE: Masked Graph Convolutional Network
https://www.ijcai.org/proceedings/2019/565
AUTHORS: Liang Yang, Fan Wu, Yingkui Wang, Junhua Gu, Yuanfang Guo
HIGHLIGHT: In this paper, they are interpreted from the perspective of propagation, and accordingly categorized into symmetric and asymmetric propagation based methods.

566, TITLE: Deep Multi-Task Learning with Adversarial-and-Cooperative Nets
https://www.ijcai.org/proceedings/2019/566
AUTHORS: Pei Yang, Qi Tan, Jieping Ye, Hanghang Tong, Jingrui He
HIGHLIGHT: In this paper, we propose a deep multi-Task learning model based on Adversarial-and-COoperative nets (TACO).

567, TITLE: Legal Judgment Prediction via Multi-Perspective Bi-Feedback Network
https://www.ijcai.org/proceedings/2019/567
AUTHORS: Wenmian Yang, Weijia Jia, Xiaojie Zhou, Yutao Luo
HIGHLIGHT: In this paper, we propose a Multi-Perspective Bi-Feedback Network with the Word Collocation Attention mechanism based on the topology structure among subtasks.

568, TITLE: Comprehensive Semi-Supervised Multi-Modal Learning
https://www.ijcai.org/proceedings/2019/568
AUTHORS: Yang Yang, Ke-Tao Wang, De-Chuan Zhan, Hui Xiong, Yuan Jiang
HIGHLIGHT: To this end, in this paper, we propose a novel Comprehensive Multi-Modal Learning (CMML) framework, which can strike a balance between the consistency and divergency modalities by considering the insufficiency in one unified framework.

569, TITLE: SPAGAN: Shortest Path Graph Attention Network
https://www.ijcai.org/proceedings/2019/569
AUTHORS: Yiding Yang, Xinchao Wang, Mingli Song, Junsong Yuan, Dacheng Tao
HIGHLIGHT: In this paper, we propose a novel GCN model, which we term as Shortest Path Graph Attention Network (SPAGAN).

570, TITLE: On the Estimation of Treatment Effect with Text Covariates
https://www.ijcai.org/proceedings/2019/570
AUTHORS: Liuyi Yao, Sheng Li, Yaliang Li, Hongfei Xue, Jing Gao, Aidong Zhang
HIGHLIGHT: To address this challenge, we propose a conditional treatment-adversarial learning based matching method (CTAM).

571, TITLE: Privacy-Preserving Stacking with Application to Cross-organizational Diabetes Prediction
https://www.ijcai.org/proceedings/2019/571
AUTHORS: Quanming Yao, Xiawei Guo, James Kwok, Weiwei Tu, Yuqiang Chen, Wenyuan Dai, Qiang Yang
HIGHLIGHT: In this paper, motivated by the success of improving predicting performance by ensemble learning, we propose to enhance privacy-preserving logistic regression by stacking.

572, TITLE: Multi-View Multiple Clustering
https://www.ijcai.org/proceedings/2019/572
AUTHORS: Shixin Yao, Guoxian Yu, Jun Wang, Carlotta Domeniconi, Xiangliang Zhang
HIGHLIGHT: To this end, we propose a novel multi-view multiple clustering (MVMC) algorithm.

573, TITLE: Amalgamating Filtered Knowledge: Learning Task-customized Student from Multi-task Teachers
https://www.ijcai.org/proceedings/2019/573
AUTHORS: Jingwen Ye, Xinchao Wang, Yixin Ji, Kairi Ou, Mingli Song
HIGHLIGHT: In this paper, we treat such pre-trained networks as teachers and explore how to learn a target student network for customized tasks, using multiple teachers that handle different tasks.

574, TITLE: A Vectorized Relational Graph Convolutional Network for Multi-Relational Network Alignment
https://www.ijcai.org/proceedings/2019/574
AUTHORS: Rui Ye, Xin Li, Yujie Fang, Hongyu Zang, Mingzhong Wang
HIGHLIGHT: In comparison with existing GCNs which cannot fully utilize multi-relation information, we propose a vectorized relational graph convolutional network (VR-GCN) to learn the embeddings of both graph entities and relations simultaneously for multi-relational networks.

575, TITLE: Distributed Collaborative Feature Selection Based on Intermediate Representation
https://www.ijcai.org/proceedings/2019/575
AUTHORS: Xiucai Ye, Hongmin Li, Akira Imakura, Tetsuya Sakurai
HIGHLIGHT: In this paper, we propose a novel distributed method which allows collaborative feature selection for multiple parties without revealing their original data.

576, TITLE: Out-of-sample Node Representation Learning for Heterogeneous Graph in Real-time Android Malware Detection
https://www.ijcai.org/proceedings/2019/576
AUTHORS: Yanfang Ye, Shifu Hou, Lingwei Chen, Jingwei Lei, Wenqiang Wan, Jiabin Wang, Qi Xiong, Fudong Shao
HIGHLIGHT: To model different types of entities (i.e., app, API, device, signature, affiliation) and rich relations among them, we present a structured heterogeneous graph (HG) for modeling.

577, TITLE: Neural Network based Continuous Conditional Random Field for Fine-grained Crime Prediction
https://www.ijcai.org/proceedings/2019/577
AUTHORS: Fei Yi, Zhiwen Yu, Fuzhen Zhuang, Bin Guo
HIGHLIGHT: To deal with it, in this paper, we propose a Neural Network based CCRF (NN-CCRF) model that formulates CCRF into an end-to-end neural network framework, which could reduce the complexity in model training and improve the overall performance.

578, TITLE: BN-invariant Sharpness Regularizes the Training Model to Better Generalization
https://www.ijcai.org/proceedings/2019/578
AUTHORS: Mingyang Yi, Huishuai Zhang, Wei Chen, Zhi-Ming Ma, Tie-Yan Liu
HIGHLIGHT: Our algorithm achieves considerably better performance than vanilla SGD over various experiment settings.

579, TITLE: Geometric Understanding for Unsupervised Subspace Learning
https://www.ijcai.org/proceedings/2019/579
AUTHORS: Shihui Ying, Lipeng Cai, Changzhou He, Yaxin Peng
HIGHLIGHT: In this paper, we address the unsupervised subspace learning from a geometric viewpoint.

580, TITLE: Belief Propagation Network for Hard Inductive Semi-Supervised Learning
https://www.ijcai.org/proceedings/2019/580
AUTHORS: Jaemin Yoo, Hyunsik Jeon, U Kang
HIGHLIGHT: In this work, we propose belief propagation networks (BPN), a novel approach to train a deep neural network in a hard inductive setting, where the test data are given without neighborhood information.

581, TITLE: Metatrace Actor-Critic: Online Step-Size Tuning by Meta-gradient Descent for Reinforcement Learning Control
https://www.ijcai.org/proceedings/2019/581
AUTHORS: Kenny Young, Baoxiang Wang, Matthew E. Taylor
HIGHLIGHT: To address these issues, we propose Metatrace, a meta-gradient descent based algorithm to tune the step-size online.

582, TITLE: Semi-supervised Three-dimensional Reconstruction Framework with GAN
https://www.ijcai.org/proceedings/2019/582
AUTHORS: Chong Yu
HIGHLIGHT: We propose a novel semi-supervised 3D reconstruction framework, namely SS-3D-GAN, which can iteratively improve any raw 3D reconstruction models by training the GAN models to converge.

583, TITLE: Interpreting and Evaluating Neural Network Robustness
https://www.ijcai.org/proceedings/2019/583
AUTHORS: Fuxun Yu, Zhuwei Qin, Chenchen Liu, Liang Zhao, Yanzhi Wang, Xiang Chen
HIGHLIGHT: This work aims to qualitatively interpret the adversarial attack and defense mechanisms through loss visualization, and establish a quantitative metric to evaluate the model's intrinsic robustness.

584, TITLE: VAEGAN: A Collaborative Filtering Framework based on Adversarial Variational Autoencoders
https://www.ijcai.org/proceedings/2019/584
AUTHORS: Xianwen Yu, Xiaoning Zhang, Yang Cao, Min Xia
HIGHLIGHT: In this paper, a novel framework named VAEGAN is proposed to address the above issue.

585, TITLE: Adaptive User Modeling with Long and Short-Term Preferences for Personalized Recommendation
https://www.ijcai.org/proceedings/2019/585
AUTHORS: Zeping Yu, Jianxun Lian, Ahmad Mahmoody, Gongshen Liu, Xing Xie
HIGHLIGHT: In this paper, we improve the traditional RNN structure by proposing a time-aware controller and a content-aware controller, so that contextual information can be well considered to control the state transition.

586, TITLE: Progressive Transfer Learning for Person Re-identification
https://www.ijcai.org/proceedings/2019/586
AUTHORS: Zhengxu Yu, Zhongming Jin, Long Wei, Jishun Guo, Jianqiang Huang, Deng Cai, Xiaofei He, Xian-Sheng Hua
HIGHLIGHT: In this paper, we study model fine-tuning from the perspective of the aggregation and utilization of the global information of the dataset when using mini-batch training.

587, TITLE:	DARec: Deep Domain Adaptation for Cross-Domain Recommendation via Transferring Rating Patterns
https://www.ijcai.org/proceedings/2019/587
AUTHORS:	Feng Yuan, Lina Yao, Boualem Benatallah
HIGHLIGHT:	In this work, inspired by the concept of domain adaptation, we proposed a deep domain adaptation model (DARec) that is capable of extracting and transferring patterns from rating matrices only without relying on any auxillary information.

588, TITLE:	KCNN: Kernel-wise Quantization to Remarkably Decrease Multiplications in Convolutional Neural Network
https://www.ijcai.org/proceedings/2019/588
AUTHORS:	Linghua Zeng, Zhangcheng Wang, Xinmei Tian
HIGHLIGHT:	In this paper, we quantize the floating-point weights in each kernel separately to multiple bit planes to remarkably decrease multiplications.

589, TITLE:	Experience Replay Optimization
https://www.ijcai.org/proceedings/2019/589
AUTHORS:	Daochen Zha, Kwei-Herng Lai, Kaixiong Zhou, Xia Hu
HIGHLIGHT:	In this work, we consider learning a replay policy to optimize the cumulative reward.

590, TITLE:	Positive and Unlabeled Learning with Label Disambiguation
https://www.ijcai.org/proceedings/2019/590
AUTHORS:	Chuang Zhang, Dexin Ren, Tongliang Liu, Jian Yang, Chen Gong
HIGHLIGHT:	To solve this problem, this paper proposes a novel algorithm dubbed as "Positive and Unlabeled learning with Label Disambiguation" (PULD).

591, TITLE:	Generalized Majorization-Minimization for Non-Convex Optimization
https://www.ijcai.org/proceedings/2019/591
AUTHORS:	Hu Zhang, Pan Zhou, Yi Yang, Jiashi Feng
HIGHLIGHT:	In this paper, we propose a novel MM surrogate function from strictly upper bounding the objective to bounding the objective in expectation.

592, TITLE:	STAR-GCN: Stacked and Reconstructed Graph Convolutional Networks for Recommender Systems
https://www.ijcai.org/proceedings/2019/592
AUTHORS:	Jiani Zhang, Xingjian Shi, Shenglin Zhao, Irwin King
HIGHLIGHT:	We propose a new STAcked and Reconstructed Graph Convolutional Networks (STAR-GCN) architecture to learn node representations for boosting the performance in recommender systems, especially in the cold start scenario.

593, TITLE:	Light-Weight Hybrid Convolutional Network for Liver Tumor Segmentation
https://www.ijcai.org/proceedings/2019/593
AUTHORS:	Jianpeng Zhang, Yutong Xie, Pingping Zhang, Hao Chen, Yong Xia, Chunhua Shen
HIGHLIGHT:	In this paper, we propose the light-weight hybrid convolutional network (LW-HCN) to segment the liver and its tumors in CT volumes.

594, TITLE:	ProNE: Fast and Scalable Network Representation Learning
https://www.ijcai.org/proceedings/2019/594
AUTHORS:	Jie Zhang, Yuxiao Dong, Yan Wang, Jie Tang, Ming Ding
HIGHLIGHT:	In this work, we present ProNE---a fast, scalable, and effective model, whose single-thread version is 10--400x faster than efficient network embedding benchmarks with 20 threads, including LINE, DeepWalk, node2vec, GraRep, and HOPE.

595, TITLE:	Towards Robust ResNet: A Small Step but a Giant Leap
https://www.ijcai.org/proceedings/2019/595
AUTHORS:	Jingfeng Zhang, Bo Han, Laura Wynter, Bryan Kian Hsiang Low, Mohan Kankanhalli
HIGHLIGHT:	This paper presents a simple yet principled approach to boosting the robustness of the residual network (ResNet) that is motivated by a dynamical systems perspective.

596, TITLE:	High Dimensional Bayesian Optimization via Supervised Dimension Reduction
https://www.ijcai.org/proceedings/2019/596
AUTHORS:	Miao Zhang, Huiqi Li, Steven Su
HIGHLIGHT:	This paper directly introduces a supervised dimension reduction method, Sliced Inverse Regression (SIR), to high dimensional Bayesian optimization, which could effectively learn the intrinsic sub-structure of objective function during the optimization.

597, TITLE:	Efficient Non-parametric Bayesian Hawkes Processes
https://www.ijcai.org/proceedings/2019/597
AUTHORS:	Rui Zhang, Christian Walder, Marian-Andrei Rizoiu, Lexing Xie
HIGHLIGHT:	In this paper, we develop an efficient non-parametric Bayesian estimation of the kernel function of Hawkes processes.

598, TITLE:	Inferring Substitutable Products with Deep Network Embedding
https://www.ijcai.org/proceedings/2019/598
AUTHORS:	Shijie Zhang, Hongzhi Yin, Qinyong Wang, Tong Chen, Hongxu Chen, Quoc Viet Hung Nguyen
HIGHLIGHT:	In this paper, we propose a semisupervised deep embedding model, namely, Substitute Products Embedding Model (SPEM), which models the substitutable relationships between products by preserving the second-order proximity, negative first-order proximity and semantic similarity in a product co-purchasing graph based on user's purchasing behaviours.

599, TITLE:	Quaternion Collaborative Filtering for Recommendation
https://www.ijcai.org/proceedings/2019/599
AUTHORS:	Shuai Zhang, Lina Yao, Lucas Vinh Tran, Aston Zhang, Yi Tay
HIGHLIGHT:	This paper proposes Quaternion Collaborative Filtering (QCF), a novel representation learning method for recommendation.

600, TITLE:	Feature-level Deeper Self-Attention Network for Sequential Recommendation
https://www.ijcai.org/proceedings/2019/600
AUTHORS:	Tingting Zhang, Pengpeng Zhao, Yanchi Liu, Victor S. Sheng, Jiajie Xu, Deqing Wang, Guanfeng Liu, Xiaofang Zhou
HIGHLIGHT:	In this paper, we propose a novel method named Feature-level Deeper Self-Attention Network (FDSA) for sequential recommendation.

601, TITLE:	Attributed Graph Clustering via Adaptive Graph Convolution
https://www.ijcai.org/proceedings/2019/601
AUTHORS:	Xiaotong Zhang, Han Liu, Qimai Li, Xiao-Ming Wu
HIGHLIGHT:	In this paper, we propose an adaptive graph convolution method for attributed graph clustering that exploits high-order graph convolution to capture global cluster structure and adaptively selects the appropriate order for different graphs.

602, TITLE:	InteractionNN: A Neural Network for Learning Hidden Features in Sparse Prediction
https://www.ijcai.org/proceedings/2019/602
AUTHORS:	Xiaowang Zhang, Qiang Gao, Zhiyong Feng
HIGHLIGHT:	In this paper, we present a neural network (InteractionNN) for sparse predictive analysis where hidden features of sparse data can be learned by multilevel feature interaction.

603, TITLE:	Multi-Group Encoder-Decoder Networks to Fuse Heterogeneous Data for Next-Day Air Quality Prediction
https://www.ijcai.org/proceedings/2019/603
AUTHORS:	Yawen Zhang, Qin Lv, Duanfeng Gao, Si Shen, Robert Dick, Michael Hannigan, Qi Liu
HIGHLIGHT:	This paper tackles this problem through three key contributions: (1) we leverage multi-source data, especially high-frequency grid-based weather data, to model air pollutant dynamics at station-level; (2) we add convolution operators on grid weather data to capture the impacts of various weather parameters on air pollutant variations; and (3) we automatically group (cross-domain) features based on their correlations, and propose multi-group Encoder-Decoder networks (MGED-Net) to effectively fuse multiple feature groups for next-day air quality prediction.

604, TITLE:	Taming the Noisy Gradient: Train Deep Neural Networks with Small Batch Sizes
https://www.ijcai.org/proceedings/2019/604
AUTHORS:	Yikai Zhang, Hui Qu, Chao Chen, Dimitris Metaxas
HIGHLIGHT:	In this paper, we tackle this problem by proposing a new framework for training deep neural network with small batches/noisy gradient.

605, TITLE:	Accelerated Inference Framework of Sparse Neural Network Based on Nested Bitmask Structure
https://www.ijcai.org/proceedings/2019/605
AUTHORS:	Yipeng Zhang, Bo Du, Lefei Zhang, Rongchun Li, Yong Dou
HIGHLIGHT:	In this paper, we propose a novel encoding approach on a sparse neural network after pruning.

606, TITLE:	DANE: Domain Adaptive Network Embedding
https://www.ijcai.org/proceedings/2019/606

AUTHORS: Yizhou Zhang, Guojie Song, Lun Du, Shuwen Yang, Yilun Jin
HIGHLIGHT: In this paper, we propose a novel Domain Adaptive Network Embedding framework, which applies graph convolutional network to learn transferable embeddings.

607, TITLE: ATTAIN: Attention-based Time-Aware LSTM Networks for Disease Progression Modeling
https://www.ijcai.org/proceedings/2019/607
AUTHORS: Yuan Zhang, Xi Yang, Julie Ivy, Min Chi
HIGHLIGHT: To tackle these limitations, we propose an attention-based time-aware LSTM Networks (ATTAIN), to improve the interpretability of LSTM and to identify the critical previous events for current diagnosis by modeling the inherent time irregularity.

608, TITLE: Scalable Block-Diagonal Locality-Constrained Projective Dictionary Learning
https://www.ijcai.org/proceedings/2019/608
AUTHORS: Zhao Zhang, Weiming Jiang, Zheng Zhang, Sheng Li, Guangcan Liu, Jie Qin
HIGHLIGHT: We propose a novel structured discriminative block- diagonal dictionary learning method, referred to as scalable Locality-Constrained Projective Dictionary Learning (LC-PDL), for efficient representation and classification.

609, TITLE: Open-Ended Long-Form Video Question Answering via Hierarchical Convolutional Self-Attention Networks
https://www.ijcai.org/proceedings/2019/609
AUTHORS: Zhu Zhang, Zhou Zhao, Zhijie Lin, Jingkuan Song, Xiaofei He
HIGHLIGHT: To tackle these problems, we propose a fast hierarchical convolutional self-attention encoder-decoder network.

610, TITLE: Localizing Unseen Activities in Video via Image Query
https://www.ijcai.org/proceedings/2019/610
AUTHORS: Zhu Zhang, Zhou Zhao, Zhijie Lin, Jingkuan Song, Deng Cai
HIGHLIGHT: Thus, we consider a new task to localize unseen activities in videos via image queries, named Image-Based Activity Localization.

611, TITLE: Multi-Prototype Networks for Unconstrained Set-based Face Recognition
https://www.ijcai.org/proceedings/2019/611
AUTHORS: Jian Zhao, Jianshu Li, Xiaoguang Tu, Fang Zhao, Yuan Xin, Junliang Xing, Hengzhu Liu, Shuicheng Yan, Jiashi Feng
HIGHLIGHT: In this paper, we address the challenging unconstrained set-based face recognition problem where each subject face is instantiated by a set of media (images and videos) instead of a single image.

612, TITLE: GAN-EM: GAN Based EM Learning Framework
https://www.ijcai.org/proceedings/2019/612
AUTHORS: Wentian Zhao, Shaojie Wang, Zhihuai Xie, Jing Shi, Chenliang Xu
HIGHLIGHT: To overcome such limitation, we propose a GAN based EM learning framework that can maximize the likelihood of images and estimate the latent variables.

613, TITLE: Large Scale Evolving Graphs with Burst Detection
https://www.ijcai.org/proceedings/2019/613
AUTHORS: Yifeng Zhao, Xiangwei Wang, Hongxia Yang, Le Song, Jie Tang
HIGHLIGHT: Thus, in this paper, we design and implement a novel framework called BurstGraph which can capture both recurrent and consistent patterns, and especially unexpected bursty network changes.

614, TITLE: AddGraph: Anomaly Detection in Dynamic Graph Using Attention-based Temporal GCN
https://www.ijcai.org/proceedings/2019/614
AUTHORS: Li Zheng, Zhenpeng Li, Jian Li, Zhao Li, Jun Gao
HIGHLIGHT: In this paper, we propose AddGraph, a general end-to-end anomalous edge detection framework using an extended temporal GCN (Graph Convolutional Network) with an attention model, which can capture both long-term patterns and the short-term patterns in dynamic graphs.

615, TITLE: Metadata-driven Task Relation Discovery for Multi-task Learning
https://www.ijcai.org/proceedings/2019/615
AUTHORS: Zimu Zheng, Yuqi Wang, Quanyu Dai, Huadi Zheng, Dan Wang
HIGHLIGHT: In this paper, we, for the first time, introduce metadata into TRD for MTL and propose a novel Metadata Clustering method, which jointly uses historical samples and additional metadata to automatically exploit the true relatedness.

616, TITLE: BeatGAN: Anomalous Rhythm Detection using Adversarially Generated Time Series
https://www.ijcai.org/proceedings/2019/616
AUTHORS: Bin Zhou, Shenghua Liu, Bryan Hooi, Xueqi Cheng, Jing Ye
HIGHLIGHT: Therefore, we propose BeatGAN, an unsupervised anomaly detection algorithm for time series data.

617, TITLE: Latent Distribution Preserving Deep Subspace Clustering
https://www.ijcai.org/proceedings/2019/617
AUTHORS: Lei Zhou, Xiao Bai, Dong Wang, Xianglong Liu, Jun Zhou, Edwin Hancock
HIGHLIGHT: In this paper, we propose a novel deep subspace clustering method based on a latent distribution-preserving autoencoder, which introduces a distribution consistency loss to guide the learning of distribution-preserving latent representation, and consequently enables strong capacity of characterizing the real-world data for subspace clustering.

618, TITLE: Reinforcement Learning Experience Reuse with Policy Residual Representation
https://www.ijcai.org/proceedings/2019/618
AUTHORS: WenJi Zhou, Yang Yu, Yingfeng Chen, Kai Guan, Tangjie Lv, Changjie Fan, Zhi-Hua Zhou
HIGHLIGHT: In this paper, we propose the policy residual representation (PRR) network, which can extract and store multiple levels of experience.

619, TITLE: Collaborative Metric Learning with Memory Network for Multi-Relational Recommender Systems
https://www.ijcai.org/proceedings/2019/619
AUTHORS: Xiao Zhou, Danyang Liu, Jianxun Lian, Xing Xie
HIGHLIGHT: Based on the observation that the underlying spectrum of user preferences is reflected in various types of interactions with items and can be uncovered by latent relational learning in metric space, we propose a unified neural learning framework, named Multi-Relational Memory Network (MRMN).

620, TITLE: One-Shot Texture Retrieval with Global Context Metric
https://www.ijcai.org/proceedings/2019/620
AUTHORS: Kai Zhu, Wei Zhai, Zheng-Jun Zha, Yang Cao
HIGHLIGHT: In this paper, we tackle one-shot texture retrieval: given an example of a new reference texture, detect and segment all the pixels of the same texture category within an arbitrary image.

621, TITLE: HDI-Forest: Highest Density Interval Regression Forest
https://www.ijcai.org/proceedings/2019/621
AUTHORS: Lin Zhu, Jiaxing Lu, Yihong Chen
HIGHLIGHT: In this paper, we propose Highest Density Interval Regression Forest (HDI-Forest), a novel quality-based PI estimation method that is instead based on Random Forest.

622, TITLE: Prediction of Mild Cognitive Impairment Conversion Using Auxiliary Information
https://www.ijcai.org/proceedings/2019/622
AUTHORS: Xiaofeng Zhu
HIGHLIGHT: In this paper, we propose a new feature selection method to exploit the issue of High Dimension Low Sample Size (HDLSS) for the prediction of Mild Cognitive Impairment (MCI) conversion.

623, TITLE: Simultaneous Representation Learning and Clustering for Incomplete Multi-view Data
https://www.ijcai.org/proceedings/2019/623
AUTHORS: Wenzhang Zhuge, Chenping Hou, Xinwang Liu, Hong Tao, Dongyun Yi
HIGHLIGHT: To address these issues, in this paper, we propose a Simultaneous Representation Learning and Clustering (SRLC) method.

624, TITLE: Persistence Bag-of-Words for Topological Data Analysis
https://www.ijcai.org/proceedings/2019/624
AUTHORS: Bartosz Zieli?ski, Micha? Lipi?ski, Mateusz Juda, Matthias Zeppelzauer, Pawe? D?otko
HIGHLIGHT: This paper introduces persistence bag-of-words: a novel and stable vectorized representation of PDs that enables the seamless integration with machine learning.

625, TITLE: Exploiting the Sign of the Advantage Function to Learn Deterministic Policies in Continuous Domains
https://www.ijcai.org/proceedings/2019/625
AUTHORS: Matthieu Zimmer, Paul Weng
HIGHLIGHT: In the context of learning deterministic policies in continuous domains, we revisit an approach, which was first proposed in Continuous Actor Critic Learning Automaton (CACLA) and later extended in Neural Fitted Actor Critic (NFAC).

626, TITLE: Predicting the Visual Focus of Attention in Multi-Person Discussion Videos
https://www.ijcai.org/proceedings/2019/626
AUTHORS: Chongyang Bai, Srijan Kumar, Jure Leskovec, Miriam Metzger, Jay F. Nunamaker, V. S. Subrahmanian
HIGHLIGHT: Here we propose ICAF (Iterative Collective Attention Focus), a collective classification model to jointly learn the visual focus of attention of all people.

627, TITLE: A Quantum-inspired Classical Algorithm for Separable Non-negative Matrix Factorization
https://www.ijcai.org/proceedings/2019/627
AUTHORS: Zhihuai Chen, Yinan Li, Xiaoming Sun, Pei Yuan, Jialin Zhang
HIGHLIGHT: In this paper, inspired by recent development on dequantizing techniques, we propose a new classical algorithm for separable NMF problem.

628, TITLE: MLRDA: A Multi-Task Semi-Supervised Learning Framework for Drug-Drug Interaction Prediction
https://www.ijcai.org/proceedings/2019/628
AUTHORS: Xu Chu, Yang Lin, Yasha Wang, Leye Wang, Jiangtao Wang, Jingyue Gao
HIGHLIGHT: In this paper, we propose a multi-task semi-supervised learning framework MLRDA for DDI prediction.

629, TITLE: Combining ADMM and the Augmented Lagrangian Method for Efficiently Handling Many Constraints
https://www.ijcai.org/proceedings/2019/629
AUTHORS: Joachim Giesen, Soeren Laue
HIGHLIGHT: Here, we address the problem of solving convex optimization problems with many convex constraints.

630, TITLE: Hierarchical Graph Convolutional Networks for Semi-supervised Node Classification
https://www.ijcai.org/proceedings/2019/630
AUTHORS: Fenyu Hu, Yanqiao Zhu, Shu Wu, Liang Wang, Tieniu Tan
HIGHLIGHT: In order to increase the receptive field, we propose a novel deep Hierarchical Graph Convolutional Network (H-GCN) for semi-supervised node classification.

631, TITLE: Playing Card-Based RTS Games with Deep Reinforcement Learning
https://www.ijcai.org/proceedings/2019/631
AUTHORS: Tianyu Liu, Zijie Zheng, Hongchang Li, Kaigui Bian, Lingyang Song
HIGHLIGHT: We present a deep model SEAT (selection-attention) to play card-based RTS games.

632, TITLE: FSM: A Fast Similarity Measurement for Gene Regulatory Networks via Genes' Influence Power
https://www.ijcai.org/proceedings/2019/632
AUTHORS: Zhongzhou Liu, Wenbin Hu
HIGHLIGHT: In this paper, a fast similarity measurement method called FSM for GRNs is proposed.

633, TITLE: Pseudo Supervised Matrix Factorization in Discriminative Subspace
https://www.ijcai.org/proceedings/2019/633
AUTHORS: Jiaqi Ma, Yipeng Zhang, Lefei Zhang, Bo Du, Dapeng Tao
HIGHLIGHT: In this paper, a novel unsupervised matrix factorization method, Pseudo Supervised Matrix Factorization (PSMF), is proposed for data clustering.

634, TITLE: Representation Learning-Assisted Click-Through Rate Prediction
https://www.ijcai.org/proceedings/2019/634
AUTHORS: Wentao Ouyang, Xiuwu Zhang, Shukui Ren, Chao Qi, Zhaojie Liu, Yanlong Du
HIGHLIGHT: In this paper, we propose DeepMCP, which models other types of relationships in order to learn more informative and statistically reliable feature representations, and in consequence to improve the performance of CTR prediction.

635, TITLE: Dynamic Electronic Toll Collection via Multi-Agent Deep Reinforcement Learning with Edge-Based Graph Convolutional Networks
https://www.ijcai.org/proceedings/2019/635
AUTHORS: Wei Qiu, Haipeng Chen, Bo An
HIGHLIGHT: To this end, we propose a novel multi-agent reinforcement learning (RL) approach for DETC.

636, TITLE: FireCast: Leveraging Deep Learning to Predict Wildfire Spread
https://www.ijcai.org/proceedings/2019/636
AUTHORS: David Radke, Anna Hessler, Dan Ellsworth

HIGHLIGHT: We present and evaluate a novel system, FireCast.

637, TITLE: Faster Distributed Deep Net Training: Computation and Communication Decoupled Stochastic Gradient Descent
https://www.ijcai.org/proceedings/2019/637
AUTHORS: Shuheng Shen, Linli Xu, Jingchang Liu, Xianfeng Liang, Yifei Cheng
HIGHLIGHT: In this paper, we propose a computation and communication decoupled stochastic gradient descent (CoCoD-SGD) algorithm to run computation and communication in parallel to reduce the communication cost.

638, TITLE: Randomized Adversarial Imitation Learning for Autonomous Driving
https://www.ijcai.org/proceedings/2019/638
AUTHORS: MyungJae Shin, Joongheon Kim
HIGHLIGHT: This paper proposes a randomized adversarial imitation learning (RAIL) method that imitates the coordination of autonomous vehicle equipped with advanced sensors.

639, TITLE: Scaling Fine-grained Modularity Clustering for Massive Graphs
https://www.ijcai.org/proceedings/2019/639
AUTHORS: Hiroaki Shiokawa, Toshiyuki Amagasa, Hiroyuki Kitagawa
HIGHLIGHT: This paper proposes gScarf, which outputs fine-grained clusters within a short running time.

640, TITLE: Node Embedding over Temporal Graphs
https://www.ijcai.org/proceedings/2019/640
AUTHORS: Uriel Singer, Ido Guy, Kira Radinsky
HIGHLIGHT: In this work, we present a method for node embedding in temporal graphs.

641, TITLE: Medical Concept Embedding with Multiple Ontological Representations
https://www.ijcai.org/proceedings/2019/641
AUTHORS: Lihong Song, Chin Wang Cheong, Kejing Yin, William K. Cheung, Benjamin C. M. Fung, Jonathan Poon
HIGHLIGHT: In this paper, we propose a deep learning model called MMORE which alleviates this conflicting objective issue by allowing multiple representations to be inferred for each ontological category via an attention mechanism.

642, TITLE: Learning Shared Vertex Representation in Heterogeneous Graphs with Convolutional Networks for Recommendation
https://www.ijcai.org/proceedings/2019/642
AUTHORS: Yanan Xu, Yanmin Zhu, Yanyan Shen, Jiadi Yu
HIGHLIGHT: In this paper, we propose to mine three kinds of information (user preference, item dependency, and user similarity on behaviors) by converting interaction sequence data into multiple graphs (i.e., a user-item graph, an item-item graph, and a user-subseq graph).

643, TITLE: Dual-Path in Dual-Path Network for Single Image Dehazing
https://www.ijcai.org/proceedings/2019/643
AUTHORS: Aiping Yang, Haixin Wang, Zhong Ji, Yanwei Pang, Ling Shao
HIGHLIGHT: To address this issue, the paper proposes a DPDP-Net (Dual-Path in Dual-Path network) framework by employing a hierarchical dual path network.

644, TITLE: Disparity-preserved Deep Cross-platform Association for Cross-platform Video Recommendation
https://www.ijcai.org/proceedings/2019/644
AUTHORS: Shengze Yu, Xin Wang, Wenwu Zhu, Peng Cui, Jingdong Wang
HIGHLIGHT: In this paper, we propose a cross-platform association model for cross-platform video recommendation, i.e., Disparity-preserved Deep Cross-platform Association (DCA), taking platform-specific disparity and granularity difference into consideration.

645, TITLE: Predicting dominance in multi-person videos
https://www.ijcai.org/proceedings/2019/645
AUTHORS: Chongyang Bai, Maksim Bolonkin, Srijan Kumar, Jure Leskovec, Judee Burgoon, Norah Dunbar, V. S. Subrahmanian
HIGHLIGHT: We introduce a novel family of variables called Dominance Rank.

646, TITLE: Procedural Generation of Initial States of Sokoban
https://www.ijcai.org/proceedings/2019/646

AUTHORS: Dâmaris S. Bento, André G. Pereira, Levi H. S. Lelis
HIGHLIGHT: In this paper we deal with the task of generating hard and solvable initial states of Sokoban puzzles.

647, TITLE: DeepInspect: A Black-box Trojan Detection and Mitigation Framework for Deep Neural Networks
https://www.ijcai.org/proceedings/2019/647
AUTHORS: Huili Chen, Cheng Fu, Jishen Zhao, Farinaz Koushanfar
HIGHLIGHT: Our goal in this paper is to address the security concern on unknown DNN to NT attacks and ensure safe model deployment.

648, TITLE: VulSniper: Focus Your Attention to Shoot Fine-Grained Vulnerabilities
https://www.ijcai.org/proceedings/2019/648
AUTHORS: Xu Duan, Jingzheng Wu, Shouling Ji, Zhiqing Rui, Tianyue Luo, Mutian Yang, Yanjun Wu
HIGHLIGHT: In this paper, we define the accurate identification of vulnerabilities in similar code as a fine-grained vulnerability detection problem.

649, TITLE: Real-Time Adversarial Attacks
https://www.ijcai.org/proceedings/2019/649
AUTHORS: Yuan Gong, Boyang Li, Christian Poellabauer, Yiyu Shi
HIGHLIGHT: In this paper, we propose a real-time adversarial attack scheme for machine learning models with streaming inputs.

650, TITLE: Explainable Fashion Recommendation: A Semantic Attribute Region Guided Approach
https://www.ijcai.org/proceedings/2019/650
AUTHORS: Min Hou, Le Wu, Enhong Chen, Zhi Li, Vincent W. Zheng, Qi Liu
HIGHLIGHT: To bridge this gap, we propose a novel Semantic Attribute Explainable Recommender System (SAERS).

651, TITLE: Model-Agnostic Adversarial Detection by Random Perturbations
https://www.ijcai.org/proceedings/2019/651
AUTHORS: Bo Huang, Yi Wang, Wei Wang
HIGHLIGHT: We propose a model-agnostic approach to resolve the problem by analysing the model responses to an input under random perturbations, and study the robustness of detecting norm-bounded adversarial distortions in a theoretical framework.

652, TITLE: Musical Composition Style Transfer via Disentangled Timbre Representations
https://www.ijcai.org/proceedings/2019/652
AUTHORS: Yun-Ning Hung, I-Tung Chiang, Yi-An Chen, Yi-Hsuan Yang
HIGHLIGHT: This paper presents, to the best of our knowledge, the first deep learning models for rearranging music of arbitrary genres.

653, TITLE: Multiple Policy Value Monte Carlo Tree Search
https://www.ijcai.org/proceedings/2019/653
AUTHORS: Li-Cheng Lan, Wei Li, Ting-Han Wei, I-Chen Wu
HIGHLIGHT: This paper introduces a new method called the multiple policy value MCTS (MPV-MCTS), which combines multiple policy value neural networks (PV-NNs) of various sizes to retain advantages of each network, where two PV-NNs f_S and f_L are used in this paper.

654, TITLE: Robustra: Training Provable Robust Neural Networks over Reference Adversarial Space
https://www.ijcai.org/proceedings/2019/654
AUTHORS: Linyi Li, Zexuan Zhong, Bo Li, Tao Xie
HIGHLIGHT: To address this issue, in this paper, we present our approach named Robustra for effectively improving the provable error bound of DNNs.

655, TITLE: Dilated Convolution with Dilated GRU for Music Source Separation
https://www.ijcai.org/proceedings/2019/655
AUTHORS: Jen-Yu Liu, Yi-Hsuan Yang
HIGHLIGHT: Therefore, in this paper, we use stacked dilated convolutions as the backbone for music source separation.

656, TITLE: Locate-Then-Detect: Real-time Web Attack Detection via Attention-based Deep Neural Networks
https://www.ijcai.org/proceedings/2019/656
AUTHORS: Tianlong Liu, Yu Qi, Liang Shi, Jianan Yan

HIGHLIGHT: In this study, we propose a novel Locate-Then-Detect (LTD) system that can precisely detect Web threats in real-time by using attention-based deep neural networks.

657, TITLE: Data Poisoning against Differentially-Private Learners: Attacks and Defenses
https://www.ijcai.org/proceedings/2019/657
AUTHORS: Yuzhe Ma, Xiaojin Zhu, Justin Hsu
HIGHLIGHT: We show that private learners are resistant to data poisoning attacks when the adversary is only able to poison a small number of items.

658, TITLE: LogAnomaly: Unsupervised Detection of Sequential and Quantitative Anomalies in Unstructured Logs
https://www.ijcai.org/proceedings/2019/658
AUTHORS: Weibin Meng, Ying Liu, Yichen Zhu, Shenglin Zhang, Dan Pei, Yuqing Liu, Yihao Chen, Ruizhi Zhang, Shimin Tao, Pei Sun, Rong Zhou
HIGHLIGHT: In this work, we propose LogAnomaly, a framework to model unstructured a log stream as a natural language sequence.

659, TITLE: Decidability of Model Checking Multi-Agent Systems with Regular Expressions against Epistemic HS Specifications
https://www.ijcai.org/proceedings/2019/659
AUTHORS: Jakub Michaliszyn, Piotr Witkowski
HIGHLIGHT: In this paper we show that the model checking Multi-Agent Systems with regular expressions against the EHS specifications is decidable.

660, TITLE: Heterogeneous Gaussian Mechanism: Preserving Differential Privacy in Deep Learning with Provable Robustness
https://www.ijcai.org/proceedings/2019/660
AUTHORS: NhatHai Phan, Minh N. Vu, Yang Liu, Ruoming Jin, Dejing Dou, Xintao Wu, My T. Thai
HIGHLIGHT: In this paper, we propose a novel Heterogeneous Gaussian Mechanism (HGM) to preserve differential privacy in deep neural networks, with provable robustness against adversarial examples.

661, TITLE: Demystifying the Combination of Dynamic Slicing and Spectrum-based Fault Localization
https://www.ijcai.org/proceedings/2019/661
AUTHORS: Sofia Reis, Rui Abreu, Marcelo d'Amorim
HIGHLIGHT: This paper reports on a comprehensive study to reassess the effects of combining DS with SFL.

662, TITLE: Equally-Guided Discriminative Hashing for Cross-modal Retrieval
https://www.ijcai.org/proceedings/2019/662
AUTHORS: Yufeng Shi, Xinge You, Feng Zheng, Shuo Wang, Qinmu Peng
HIGHLIGHT: To handle this problem, we propose Equally-Guided Discriminative Hashing (EGDH), which jointly takes into consideration semantic structure and discriminability.

663, TITLE: A Privacy Preserving Collusion Secure DCOP Algorithm
https://www.ijcai.org/proceedings/2019/663
AUTHORS: Tamir Tassa, Tal Grinshpoun, Avishai Yanay
HIGHLIGHT: In this study we propose the first privacy-preserving DCOP algorithm that is immune against coalitions, under the assumption of honest majority.

664, TITLE: Two-Stage Generative Models of Simulating Training Data at The Voxel Level for Large-Scale Microscopy Bioimage Segmentation
https://www.ijcai.org/proceedings/2019/664
AUTHORS: Deli Wang, Ting Zhao, Nenggan Zheng, Zhefeng Gong
HIGHLIGHT: To provide a shortcut for this costly step, we propose a novel two-stage generative model for simulating voxel level training data based on a specially designed objective function of preserving foreground labels.

665, TITLE: Lower Bound of Locally Differentially Private Sparse Covariance Matrix Estimation
https://www.ijcai.org/proceedings/2019/665
AUTHORS: Di Wang, Jinhui Xu
HIGHLIGHT: In this paper, we study the sparse covariance matrix estimation problem in the local differential privacy model, and give a non-trivial lower bound on the non-interactive private minimax risk in the metric of squared spectral norm.

666, TITLE: Principal Component Analysis in the Local Differential Privacy Model
https://www.ijcai.org/proceedings/2019/666
AUTHORS: Di Wang, Jinhui Xu
HIGHLIGHT: In this paper, we study the Principal Component Analysis (PCA) problem under the (distributed) non-interactive local differential privacy model.

667, TITLE: Binarized Collaborative Filtering with Distilling Graph Convolutional Network
https://www.ijcai.org/proceedings/2019/667
AUTHORS: Haoyu Wang, Defu Lian, Yong Ge
HIGHLIGHT: Therefore, we propose a novel framework to convert the binary constrained optimization problem into an equivalent continuous optimization problem with a stochastic penalty.

668, TITLE: Novel Collaborative Filtering Recommender Friendly to Privacy Protection
https://www.ijcai.org/proceedings/2019/668
AUTHORS: Jun Wang, Qiang Tang, Afonso Arriaga, Peter Y. A. Ryan
HIGHLIGHT: In this paper, we propose an efficient recommendation algorithm, named CryptoRec, which has two nice properties: (1) can estimate a new user's preferences by directly using a model pre-learned from an expert dataset, and the new user's data is not required to train the model; (2) can compute recommendations with only addition and multiplication operations.

669, TITLE: Adversarial Examples for Graph Data: Deep Insights into Attack and Defense
https://www.ijcai.org/proceedings/2019/669
AUTHORS: Huijun Wu, Chen Wang, Yuriy Tyshetskiy, Andrew Docherty, Kai Lu, Liming Zhu
HIGHLIGHT: In this paper, we propose techniques for both an adversarial attack and a defense against adversarial attacks.

670, TITLE: FABA: An Algorithm for Fast Aggregation against Byzantine Attacks in Distributed Neural Networks
https://www.ijcai.org/proceedings/2019/670
AUTHORS: Qi Xia, Zeyi Tao, Zijiang Hao, Qun Li
HIGHLIGHT: In this paper, we propose FABA, a Fast Aggregation algorithm against Byzantine Attacks, which removes the outliers in the uploaded gradients and obtains gradients that are close to the true gradients.

671, TITLE: BAYHENN: Combining Bayesian Deep Learning and Homomorphic Encryption for Secure DNN Inference
https://www.ijcai.org/proceedings/2019/671
AUTHORS: Peichen Xie, Bingzhe Wu, Guangyu Sun
HIGHLIGHT: In this paper, we present a practical solution named BAYHENN for secure DNN inference.

672, TITLE: Toward Efficient Navigation of Massive-Scale Geo-Textual Streams
https://www.ijcai.org/proceedings/2019/672
AUTHORS: Chengcheng Yang, Lisi Chen, Shuo Shang, Fan Zhu, Li Liu, Ling Shao
HIGHLIGHT: In this paper, we present NQ-tree, which combines new structure designs and self-tuning methods to navigate between update and search efficiency.

673, TITLE: Temporal Pyramid Pooling Convolutional Neural Network for Cover Song Identification
https://www.ijcai.org/proceedings/2019/673
AUTHORS: Zhesong Yu, Xiaoshuo Xu, Xiaoou Chen, Deshun Yang
HIGHLIGHT: In this paper, Convolutional Neural Networks (CNNs) are used for representation learning toward this task.

674, TITLE: Data Poisoning Attack against Knowledge Graph Embedding
https://www.ijcai.org/proceedings/2019/674
AUTHORS: Hengtong Zhang, Tianhang Zheng, Jing Gao, Chenglin Miao, Lu Su, Yaliang Li, Kui Ren
HIGHLIGHT: To fill this gap, we propose a collection of data poisoning attack strategies, which can effectively manipulate the plausibility of arbitrary targeted facts in a knowledge graph by adding or deleting facts on the graph.

675, TITLE: On Privacy Protection of Latent Dirichlet Allocation Model Training
https://www.ijcai.org/proceedings/2019/675
AUTHORS: Fangyuan Zhao, Xuebin Ren, Shusen Yang, Xinyu Yang
HIGHLIGHT: To mitigate the privacy issues in LDA, we focus on studying privacy-preserving algorithms of LDA model training in this paper.

676, TITLE: K-Core Maximization: An Edge Addition Approach
https://www.ijcai.org/proceedings/2019/676

AUTHORS: Zhongxin Zhou, Fan Zhang, Xuemin Lin, Wenjie Zhang, Chen Chen
HIGHLIGHT: In this paper, we study the edge k-core problem: Given a graph G, an integer k and a budget b, add b edges to non-adjacent vertex pairs in G such that the k-core is maximized.

677, TITLE: Pivotal Relationship Identification: The K-Truss Minimization Problem
https://www.ijcai.org/proceedings/2019/677
AUTHORS: Weijie Zhu, Mengqi Zhang, Chen Chen, Xiaoyang Wang, Fan Zhang, Xuemin Lin
HIGHLIGHT: In this paper, we use the k-truss model to measure the stability of a social network. To identify critical connections, we propose a novel problem, named k-truss minimization.

678, TITLE: Early Discovery of Emerging Entities in Microblogs
https://www.ijcai.org/proceedings/2019/678
AUTHORS: Satoshi Akasaki, Naoki Yoshinaga, Masashi Toyoda
HIGHLIGHT: We therefore introduce a novel task of discovering truly emerging entities when they have just been introduced to the public through microblogs and propose an effective method based on time-sensitive distant supervision, which exploits distinctive early-stage contexts of emerging entities.

679, TITLE: Neural Program Induction for KBQA Without Gold Programs or Query Annotations
https://www.ijcai.org/proceedings/2019/679
AUTHORS: Ghulam Ahmed Ansari, Amrita Saha, Vishwajeet Kumar, Mohan Bhambhani, Karthik Sankaranarayanan, Soumen Chakrabarti
HIGHLIGHT: To deal with these, we propose a noise-resilient NPI model, Stable Sparse Reward based Programmer (SSRP) that evades noise-induced instability through continual retrospection and its comparison with current learning behavior.

680, TITLE: Medical Concept Representation Learning from Multi-source Data
https://www.ijcai.org/proceedings/2019/680
AUTHORS: Tian Bai, Brian L. Egleston, Richard Bleicher, Slobodan Vucetic
HIGHLIGHT: To be able to properly utilize such multi-source medical claim data, we propose an approach that represents medical codes from different ontologies in the same vector space.

681, TITLE: Multi-Domain Sentiment Classification Based on Domain-Aware Embedding and Attention
https://www.ijcai.org/proceedings/2019/681
AUTHORS: Yitao Cai, Xiaojun Wan
HIGHLIGHT: In this work, we propose a novel completely-shared multi-domain neural sentiment classification model to learn domain-aware word embeddings and make use of domain-aware attention mechanism.

682, TITLE: A Latent Variable Model for Learning Distributional Relation Vectors
https://www.ijcai.org/proceedings/2019/682
AUTHORS: Jose Camacho-Collados, Luis Espinosa-Anke, Shoaib Jameel, Steven Schockaert
HIGHLIGHT: To address this issue, we propose a latent variable model that aims to explicitly determine what words from the given sentences best characterize the relationship between the two target words.

683, TITLE: Generating Multiple Diverse Responses with Multi-Mapping and Posterior Mapping Selection
https://www.ijcai.org/proceedings/2019/683
AUTHORS: Chaotao Chen, Jinhua Peng, Fan Wang, Jun Xu, Hua Wu
HIGHLIGHT: In this paper, we propose a multi-mapping mechanism to better capture the one-to-many relationship, where multiple mapping modules are employed as latent mechanisms to model the semantic mappings from an input post to its diverse responses.

684, TITLE: Sentiment-Controllable Chinese Poetry Generation
https://www.ijcai.org/proceedings/2019/684
AUTHORS: Huimin Chen, Xiaoyuan Yi, Maosong Sun, Wenhao Li, Cheng Yang, Zhipeng Guo
HIGHLIGHT: To address this problem, we first collect a manually-labelled sentimental poetry corpus with fine-grained sentiment labels. Then we propose a novel semi-supervised conditional Variational Auto-Encoder model for sentiment-controllable poetry generation.

685, TITLE: From Words to Sentences: A Progressive Learning Approach for Zero-resource Machine Translation with Visual Pivots
https://www.ijcai.org/proceedings/2019/685
AUTHORS: Shizhe Chen, Qin Jin, Jianlong Fu
HIGHLIGHT: In this work, we propose a progressive learning approach for image-pivoted zero-resource machine translation.

686, TITLE: Learning towards Abstractive Timeline Summarization

https://www.ijcai.org/proceedings/2019/686

AUTHORS: Xiuying Chen, Zhangming Chan, Shen Gao, Meng-Hsuan Yu, Dongyan Zhao, Rui Yan

HIGHLIGHT: In this paper, we propose the task of abstractive timeline summarization, which tends to concisely paraphrase the information in the time-stamped events.Unlike traditional document summarization, timeline summarization needs to model the time series information of the input events and summarize important events in chronological order.To tackle this challenge, we propose a memory-based timeline summarization model (MTS).

687, TITLE: Coreference Aware Representation Learning for Neural Named Entity Recognition

https://www.ijcai.org/proceedings/2019/687

AUTHORS: Zeyu Dai, Hongliang Fei, Ping Li

HIGHLIGHT: In this paper, we propose a novel approach to learn coreference-aware word representations for the NER task at the document level.

688, TITLE: Learning Assistance from an Adversarial Critic for Multi-Outputs Prediction

https://www.ijcai.org/proceedings/2019/688

AUTHORS: Yue Deng, Yilin Shen, Hongxia Jin

HIGHLIGHT: We introduce an adversarial-critic-and-assistant (ACA) learning framework to improve the performance of existing supervised learning with multiple outputs.

689, TITLE: End-to-End Multi-Perspective Matching for Entity Resolution

https://www.ijcai.org/proceedings/2019/689

AUTHORS: Cheng Fu, Xianpei Han, Le Sun, Bo Chen, Wei Zhang, Suhui Wu, Hao Kong

HIGHLIGHT: To resolve the above problems, this paper proposes an end-to-end multi-perspective entity matching model, which can adaptively select optimal similarity measures for heterogenous attributes by jointly learning and selecting similarity measures in an end-to-end way.

690, TITLE: Difficulty Controllable Generation of Reading Comprehension Questions

https://www.ijcai.org/proceedings/2019/690

AUTHORS: Yifan Gao, Lidong Bing, Wang Chen, Michael Lyu, Irwin King

HIGHLIGHT: We investigate the difficulty levels of questions in reading comprehension datasets such as SQuAD, and propose a new question generation setting, named Difficulty-controllable Question Generation (DQG).

691, TITLE: Modeling Source Syntax and Semantics for Neural AMR Parsing

https://www.ijcai.org/proceedings/2019/691

AUTHORS: DongLai Ge, Junhui Li, Muhua Zhu, Shoushan Li

HIGHLIGHT: In this paper, we propose two effective approaches to explicitly modeling source syntax and semantics into neural seq2seq AMR parsing.

692, TITLE: CNN-Based Chinese NER with Lexicon Rethinking

https://www.ijcai.org/proceedings/2019/692

AUTHORS: Tao Gui, Ruotian Ma, Qi Zhang, Lujun Zhao, Yu-Gang Jiang, Xuanjing Huang

HIGHLIGHT: In this work, we propose a faster alternative to Chinese NER: a convolutional neural network (CNN)-based method that incorporates lexicons using a rethinking mechanism.

693, TITLE: Dual Visual Attention Network for Visual Dialog

https://www.ijcai.org/proceedings/2019/693

AUTHORS: Dan Guo, Hui Wang, Meng Wang

HIGHLIGHT: This paper aims to address cross-modal semantic correlation for visual dialog.

694, TITLE: AmazonQA: A Review-Based Question Answering Task

https://www.ijcai.org/proceedings/2019/694

AUTHORS: Mansi Gupta, Nitish Kulkarni, Raghuveer Chanda, Anirudha Rayasam, Zachary C. Lipton

HIGHLIGHT: To this end, we introduce a new dataset and propose a method that combines informational retrieval techniques for selecting relevant reviews (given a question) and "reading comprehension" models for synthesizing an answer (given a question and review).

695, TITLE: Answering Binary Causal Questions Through Large-Scale Text Mining: An Evaluation Using Cause-Effect Pairs from Human Experts

https://www.ijcai.org/proceedings/2019/695
AUTHORS: Oktie Hassanzadeh, Debarun Bhattacharjya, Mark Feblowitz, Kavitha Srinivas, Michael Perrone, Shirin Sohrabi, Michael Katz
HIGHLIGHT: In this paper, we study the problem of answering questions of type "Could X cause Y?"

696, TITLE: GSN: A Graph-Structured Network for Multi-Party Dialogues
https://www.ijcai.org/proceedings/2019/696
AUTHORS: Wenpeng Hu, Zhangming Chan, Bing Liu, Dongyan Zhao, Jinwen Ma, Rui Yan
HIGHLIGHT: This paper generalizes existing sequence-based models to a Graph-Structured neural Network (GSN) for dialogue modeling.

697, TITLE: Leap-LSTM: Enhancing Long Short-Term Memory for Text Categorization
https://www.ijcai.org/proceedings/2019/697
AUTHORS: Ting Huang, Gehui Shen, Zhi-Hong Deng
HIGHLIGHT: To this end, we propose Leap-LSTM, an LSTM-enhanced model which dynamically leaps between words while reading texts.

698, TITLE: Relation Extraction Using Supervision from Topic Knowledge of Relation Labels
https://www.ijcai.org/proceedings/2019/698
AUTHORS: Haiyun Jiang, Li Cui, Zhe Xu, Deqing Yang, Jindong Chen, Chenguang Li, Jingping Liu, Jiaqing Liang, Chao Wang, Yanghua Xiao, Wei Wang
HIGHLIGHT: In this paper, we mine the topic knowledge of a relation to explicitly represent the semantics of this relation, and model relation extraction as a matching problem.

699, TITLE: Representation Learning with Weighted Inner Product for Universal Approximation of General Similarities
https://www.ijcai.org/proceedings/2019/699
AUTHORS: Geewook Kim, Akifumi Okuno, Kazuki Fukui, Hidetoshi Shimodaira
HIGHLIGHT: We propose weighted inner product similarity (WIPS) for neural network-based graph embedding.

700, TITLE: Incorporating Structural Information for Better Coreference Resolution
https://www.ijcai.org/proceedings/2019/700
AUTHORS: Fang Kong, Fu Jian
HIGHLIGHT: In this paper, we focus on effectively incorporating structural information to neural coreference resolution from three aspects.

701, TITLE: Knowledge Base Question Answering with Topic Units
https://www.ijcai.org/proceedings/2019/701
AUTHORS: Yunshi Lan, Shuohang Wang, Jing Jiang
HIGHLIGHT: In this paper, we propose to perform topic unit linking where topic units cover a wider range of units of a KB.

702, TITLE: Adversarial Transfer for Named Entity Boundary Detection with Pointer Networks
https://www.ijcai.org/proceedings/2019/702
AUTHORS: Jing Li, Deheng Ye, Shuo Shang
HIGHLIGHT: In this paper, we focus on named entity boundary detection, which aims to detect the start and end boundaries of an entity mention in text, without predicting its type.

703, TITLE: Towards Discriminative Representation Learning for Speech Emotion Recognition
https://www.ijcai.org/proceedings/2019/703
AUTHORS: Runnan Li, Zhiyong Wu, Jia Jia, Yaohua Bu, Sheng Zhao, Helen Meng
HIGHLIGHT: In this paper, inspired by human emotion perception, we propose a novel representation learning component (RLC) for SER system, which is constructed with Multi-head Self-attention and Global Context-aware Attention Long Short-Term Memory Recurrent Neutral Network (GCA-LSTM).

704, TITLE: Self-attentive Biaffine Dependency Parsing
https://www.ijcai.org/proceedings/2019/704
AUTHORS: Ying Li, Zhenghua Li, Min Zhang, Rui Wang, Sheng Li, Luo Si
HIGHLIGHT: Motivated by the success of the transformer-based machine translation, this work for the first time applies the self-attention mechanism to dependency parsing as the replacement of the BiLSTM-based encoders, leading to competitive performance on both English and Chinese benchmark data.

705, TITLE: Reading selectively via Binary Input Gated Recurrent Unit
https://www.ijcai.org/proceedings/2019/705
AUTHORS: Zhe Li, Peisong Wang, Hanqing Lu, Jian Cheng
HIGHLIGHT: Inspired by human reading, we introduce binary input gated recurrent unit (BIGRU), a GRU based model using a binary input gate instead of the reset gate in GRU.

706, TITLE: Learning to Select Knowledge for Response Generation in Dialog Systems
https://www.ijcai.org/proceedings/2019/706
AUTHORS: Rongzhong Lian, Min Xie, Fan Wang, Jinhua Peng, Hua Wu
HIGHLIGHT: Motivated by this, we propose an end-to-end neural model which employs a novel knowledge selection mechanism where both prior and posterior distributions over knowledge are used to facilitate knowledge selection.

707, TITLE: Deep Mask Memory Network with Semantic Dependency and Context Moment for Aspect Level Sentiment Classification
https://www.ijcai.org/proceedings/2019/707
AUTHORS: Peiqin Lin, Meng Yang, Jianhuang Lai
HIGHLIGHT: In this paper, we propose a novel framework for aspect level sentiment classification, deep mask memory network with semantic dependency and context moment (DMMN-SDCM), which integrates semantic parsing information of the aspect and the inter-aspect relation information into deep memory network.

708, TITLE: Exploring and Distilling Cross-Modal Information for Image Captioning
https://www.ijcai.org/proceedings/2019/708
AUTHORS: Fenglin Liu, Xuancheng Ren, Yuanxin Liu, Kai Lei, Xu Sun
HIGHLIGHT: In this work, we argue that such understanding requires visual attention to correlated image regions and semantic attention to coherent attributes of interest.

709, TITLE: Network Embedding with Dual Generation Tasks
https://www.ijcai.org/proceedings/2019/709
AUTHORS: Jie Liu, Na Li, Zhicheng He
HIGHLIGHT: In this paper, we propose a general end-to-end model, Dual GEnerative Network Embedding (DGENE), to leverage the complementary information of network structure and content.

710, TITLE: Building Personalized Simulator for Interactive Search
https://www.ijcai.org/proceedings/2019/710
AUTHORS: Qianlong Liu, Baoliang Cui, Zhongyu Wei, Baolin Peng, Haikuan Huang, Hongbo Deng, Jianye Hao, Xuanjing Huang, Kam-Fai Wong
HIGHLIGHT: To address this issue, we propose to employ a simulator to mimic the environment for the offline training of the agent.

711, TITLE: A Dual Reinforcement Learning Framework for Unsupervised Text Style Transfer
https://www.ijcai.org/proceedings/2019/711
AUTHORS: Fuli Luo, Peng Li, Jie Zhou, Pengcheng Yang, Baobao Chang, Xu Sun, Zhifang Sui
HIGHLIGHT: Therefore, in this paper, we propose a dual reinforcement learning framework to directly transfer the style of the text via a one-step mapping model, without any separation of content and style.

712, TITLE: Unsupervised Neural Aspect Extraction with Sememes
https://www.ijcai.org/proceedings/2019/712
AUTHORS: Ling Luo, Xiang Ao, Yan Song, Jinyao Li, Xiaopeng Yang, Qing He, Dong Yu
HIGHLIGHT: In this paper, we present an unsupervised neural framework that leverages sememes to enhance lexical semantics.

713, TITLE: Randomized Greedy Search for Structured Prediction: Amortized Inference and Learning
https://www.ijcai.org/proceedings/2019/713
AUTHORS: Chao Ma, F A Rezaur Rahman Chowdhury, Aryan Deshwal, Md Rakibul Islam, Janardhan Rao Doppa, Dan Roth
HIGHLIGHT: This paper makes four contributions towards the goal of a computationally-efficient inference and training approach for structured prediction that allows to employ complex models and to optimize for non-decomposable loss functions.

714, TITLE: Aspect-Based Sentiment Classification with Attentive Neural Turing Machines
https://www.ijcai.org/proceedings/2019/714
AUTHORS: Qianren Mao, Jianxin Li, Senzhang Wang, Yuanning Zhang, Hao Peng, Min He, Lihong Wang

HIGHLIGHT: To solve this issue, we propose a novel model of Attentive Neural Turing Machines (ANTM).

715, TITLE: Learning Task-Specific Representation for Novel Words in Sequence Labeling
https://www.ijcai.org/proceedings/2019/715
AUTHORS: Minlong Peng, Qi Zhang, Xiaoyu Xing, Tao Gui, Jinlan Fu, Xuanjing Huang
HIGHLIGHT: In this work, we address the OOV problem in sequence labeling using only training data of the task.

716, TITLE: Improving Cross-Domain Performance for Relation Extraction via Dependency Prediction and Information Flow Control
https://www.ijcai.org/proceedings/2019/716
AUTHORS: Amir Pouran Ben Veyseh, Thien Nguyen, Dejing Dou
HIGHLIGHT: This paper introduces a novel method to use dependency trees in RE for deep learning models that jointly predicts dependency and semantics relations.

717, TITLE: Learn to Select via Hierarchical Gate Mechanism for Aspect-Based Sentiment Analysis
https://www.ijcai.org/proceedings/2019/717
AUTHORS: Xiangying Ran, Yuanyuan Pan, Wei Sun, Chongjun Wang
HIGHLIGHT: In this paper, we propose a novel architecture named Hierarchical Gate Memory Network (HGMN) for ABSA: firstly, we employ the proposed hierarchical gate mechanism to learn to select the related part about the given aspect, which can keep the original sequence structure of sentence at the same time.

718, TITLE: Aligning Learning Outcomes to Learning Resources: A Lexico-Semantic Spatial Approach
https://www.ijcai.org/proceedings/2019/718
AUTHORS: Swarnadeep Saha, Malolan Chetlur, Tejas Indulal Dhamecha, W M Gayathri K Wijayarathna, Red Mendoza, Paul Gagnon, Nabil Zary, Shantanu Godbole
HIGHLIGHT: In this paper, we introduce the novel problem of aligning LOs (LO is usually a sentence long text) to relevant pages of LRs (LRs are in the form of slide decks).

719, TITLE: A Deep Generative Model for Code Switched Text
https://www.ijcai.org/proceedings/2019/719
AUTHORS: Bidisha Samanta, Sharmila Reddy, Hussain Jagirdar, Niloy Ganguly, Soumen Chakrabarti
HIGHLIGHT: We introduce VACS, a novel variational autoencoder architecture specifically tailored to code-switching phenomena.

720, TITLE: Knowledge Aware Semantic Concept Expansion for Image-Text Matching
https://www.ijcai.org/proceedings/2019/720
AUTHORS: Botian Shi, Lei Ji, Pan Lu, Zhendong Niu, Nan Duan
HIGHLIGHT: In this paper, we develop a Scene Concept Graph (SCG) by aggregating image scene graphs and extracting frequently co-occurred concept pairs as scene common-sense knowledge.

721, TITLE: Exploiting Persona Information for Diverse Generation of Conversational Responses
https://www.ijcai.org/proceedings/2019/721
AUTHORS: Haoyu Song, Wei-Nan Zhang, Yiming Cui, Dong Wang, Ting Liu
HIGHLIGHT: In this paper, we propose a memory-augmented architecture to exploit persona information from context and incorporate a conditional variational autoencoder model together to generate diverse and sustainable conversations.

722, TITLE: Cold-Start Aware Deep Memory Network for Multi-Entity Aspect-Based Sentiment Analysis
https://www.ijcai.org/proceedings/2019/722
AUTHORS: Kaisong Song, Wei Gao, Lujun Zhao, Jun Lin, Changlong Sun, Xiaozhong Liu
HIGHLIGHT: In this paper, we focus on a more general multiple entity aspect-based sentiment analysis (ME-ABSA) task which aims at identifying the sentiment polarity of different aspects of multiple entities in their context.

723, TITLE: GANs for Semi-Supervised Opinion Spam Detection
https://www.ijcai.org/proceedings/2019/723
AUTHORS: Gray Stanton, Athirai A. Irissappane
HIGHLIGHT: We propose spamGAN, a generative adversarial network which relies on limited labeled data as well as unlabeled data for opinion spam detection.

724, TITLE: PRoFET: Predicting the Risk of Firms from Event Transcripts
https://www.ijcai.org/proceedings/2019/724

AUTHORS: Christoph Kilian Theil, Samuel Broscheit, Heiner Stuckenschmidt
HIGHLIGHT: We introduce PRoFET, the first neural model for volatility prediction jointly exploiting both semantic language representations and a comprehensive set of financial features.

725, TITLE: Unsupervised Embedding Enhancements of Knowledge Graphs using Textual Associations
https://www.ijcai.org/proceedings/2019/725
AUTHORS: Neil Veira, Brian Keng, Kanchana Padmanabhan, Andreas Veneris
HIGHLIGHT: This paper describes an unsupervised approach to incorporate textual information by augmenting entity embeddings with embeddings of associated words.

726, TITLE: Swell-and-Shrink: Decomposing Image Captioning by Transformation and Summarization
https://www.ijcai.org/proceedings/2019/726
AUTHORS: Hanzhang Wang, Hanli Wang, Kaisheng Xu
HIGHLIGHT: To overcome the shortcomings, a swell-shrink method is proposed to redefine image captioning as a compositional task which consists of two separated modules: modality transformation and text compression.

727, TITLE: T-CVAE: Transformer-Based Conditioned Variational Autoencoder for Story Completion
https://www.ijcai.org/proceedings/2019/727
AUTHORS: Tianming Wang, Xiaojun Wan
HIGHLIGHT: In this paper, we present a novel conditional variational autoencoder based on Transformer for missing plot generation.

728, TITLE: Robust Embedding with Multi-Level Structures for Link Prediction
https://www.ijcai.org/proceedings/2019/728
AUTHORS: Zihan Wang, Zhaochun Ren, Chunyu He, Peng Zhang, Yue Hu
HIGHLIGHT: In this work, we propose a novel multi-level graph neural network (M-GNN) to address the above challenges.

729, TITLE: Revealing Semantic Structures of Texts: Multi-grained Framework for Automatic Mind-map Generation
https://www.ijcai.org/proceedings/2019/729
AUTHORS: Yang Wei, Honglei Guo, Jinmao Wei, Zhong Su
HIGHLIGHT: In this paper, we propose a multi-grained framework for automatic mind-map generation.

730, TITLE: Correct-and-Memorize: Learning to Translate from Interactive Revisions
https://www.ijcai.org/proceedings/2019/730
AUTHORS: Rongxiang Weng, Hao Zhou, Shujian Huang, Lei Li, Yifan Xia, Jiajun Chen
HIGHLIGHT: To solve both issues, we propose CAMIT, a novel method for translating in an interactive environment.

731, TITLE: Modeling Noisy Hierarchical Types in Fine-Grained Entity Typing: A Content-Based Weighting Approach
https://www.ijcai.org/proceedings/2019/731
AUTHORS: Junshuang Wu, Richong Zhang, Yongyi Mao, Hongyu Guo, Jinpeng Huai
HIGHLIGHT: In this paper, we directly model the structured, noisy labels with a novel content-sensitive weighting schema.

732, TITLE: Mask and Infill: Applying Masked Language Model for Sentiment Transfer
https://www.ijcai.org/proceedings/2019/732
AUTHORS: Xing Wu, Tao Zhang, Liangjun Zang, Jizhong Han, Songlin Hu
HIGHLIGHT: With this intuition, we propose a two steps approach: Mask and Infill.

733, TITLE: Relation-Aware Entity Alignment for Heterogeneous Knowledge Graphs
https://www.ijcai.org/proceedings/2019/733
AUTHORS: Yuting Wu, Xiao Liu, Yansong Feng, Zheng Wang, Rui Yan, Dongyan Zhao
HIGHLIGHT: In this paper, we propose a novel Relation-aware Dual-Graph Convolutional Network (RDGCN) to incorporate relation information via attentive interactions between the knowledge graph and its dual relation counterpart, and further capture neighboring structures to learn better entity representations.

734, TITLE: RTHN: A RNN-Transformer Hierarchical Network for Emotion Cause Extraction
https://www.ijcai.org/proceedings/2019/734
AUTHORS: Rui Xia, Mengran Zhang, Zixiang Ding
HIGHLIGHT: In this work, we propose a joint emotion cause extraction framework, named RNN-Transformer Hierarchical Network (RTHN), to encode and classify multiple clauses synchronously.

735, TITLE:	Sharing Attention Weights for Fast Transformer
https://www.ijcai.org/proceedings/2019/735
AUTHORS:	Tong Xiao, Yinqiao Li, Jingbo Zhu, Zhengtao Yu, Tongran Liu
HIGHLIGHT:	In this paper we speed up Transformer via a fast and lightweight attention model.

736, TITLE:	A Goal-Driven Tree-Structured Neural Model for Math Word Problems
https://www.ijcai.org/proceedings/2019/736
AUTHORS:	Zhipeng Xie, Shichao Sun
HIGHLIGHT:	This paper proposes a tree-structured neural model to generate expression tree in a goal-driven manner.

737, TITLE:	Dual-View Variational Autoencoders for Semi-Supervised Text Matching
https://www.ijcai.org/proceedings/2019/737
AUTHORS:	Zhongbin Xie, Shuai Ma
HIGHLIGHT:	In this study, we propose to take the sentence-level embedding features and the word-level interaction features as two distinct views of a sentence pair, and unify them with a framework of Variational Autoencoders such that the sentence pair is matched in a semi-supervised manner.

738, TITLE:	Earlier Attention? Aspect-Aware LSTM for Aspect-Based Sentiment Analysis
https://www.ijcai.org/proceedings/2019/738
AUTHORS:	Bowen Xing, Lejian Liao, Dandan Song, Jingang Wang, Fuzheng Zhang, Zhongyuan Wang, Heyan Huang
HIGHLIGHT:	This paper proposes a novel variant of LSTM, termed as aspect-aware LSTM (AA-LSTM), which incorporates aspect information into LSTM cells in the context modeling stage before the attention mechanism.

739, TITLE:	Polygon-Net: A General Framework for Jointly Boosting Multiple Unsupervised Neural Machine Translation Models
https://www.ijcai.org/proceedings/2019/739
AUTHORS:	Chang Xu, Tao Qin, Gang Wang, Tie-Yan Liu
HIGHLIGHT:	In this work, we propose a general framework called Polygon-Net, which leverages multi auxiliary languages for jointly boosting unsupervised neural machine translation models.

740, TITLE:	Neural Collective Entity Linking Based on Recurrent Random Walk Network Learning
https://www.ijcai.org/proceedings/2019/740
AUTHORS:	Mengge Xue, Weiming Cai, Jinsong Su, Linfeng Song, Yubin Ge, Yubao Liu, Bin Wang
HIGHLIGHT:	In this paper, we propose a novel end-to-end neural network with recurrent random-walk layers for collective EL, which introduces external knowledge to model the semantic interdependence between different EL decisions.

741, TITLE:	Robust Audio Adversarial Example for a Physical Attack
https://www.ijcai.org/proceedings/2019/741
AUTHORS:	Hiromu Yakura, Jun Sakuma
HIGHLIGHT:	We propose a method to generate audio adversarial examples that can attack a state-of-the-art speech recognition model in the physical world.

742, TITLE:	HorNet: A Hierarchical Offshoot Recurrent Network for Improving Person Re-ID via Image Captioning
https://www.ijcai.org/proceedings/2019/742
AUTHORS:	Shiyang Yan, Jun Xu, Yuai Liu, Lin Xu
HIGHLIGHT:	In this paper, instead, we propose a novel hierarchical offshoot recurrent network (HorNet) for improving person re-ID via image captioning.

743, TITLE:	Knowledge-enhanced Hierarchical Attention for Community Question Answering with Multi-task and Adaptive Learning
https://www.ijcai.org/proceedings/2019/743
AUTHORS:	Min Yang, Lei Chen, Xiaojun Chen, Qingyao Wu, Wei Zhou, Ying Shen
HIGHLIGHT:	In this paper, we propose a Knowledge-enhanced Hierarchical Attention for community question answering with Multi-task learning and Adaptive learning (KHAMA).

744, TITLE:	Knowledgeable Storyteller: A Commonsense-Driven Generative Model for Visual Storytelling
https://www.ijcai.org/proceedings/2019/744
AUTHORS:	Pengcheng Yang, Fuli Luo, Peng Chen, Lei Li, Zhiyi Yin, Xiaodong He, Xu Sun
HIGHLIGHT:	Therefore, in this work, we present a commonsense-driven generative model, which aims to introduce crucial commonsense from the external knowledge base for visual storytelling.

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745, TITLE:	Triplet Enhanced AutoEncoder: Model-free Discriminative Network Embedding
https://www.ijcai.org/proceedings/2019/745
AUTHORS:	Yao Yang, Haoran Chen, Junming Shao
HIGHLIGHT:	In this paper, we present Triplet Enhanced AutoEncoder (TEA), a new deep network embedding approach from the perspective of metric learning.

746, TITLE:	Improving Multilingual Sentence Embedding using Bi-directional Dual Encoder with Additive Margin Softmax
https://www.ijcai.org/proceedings/2019/746
AUTHORS:	Yinfei Yang, Gustavo Hernandez Abrego, Steve Yuan, Mandy Guo, Qinlan Shen, Daniel Cer, Yun-hsuan Sung, Brian Strope, Ray Kurzweil
HIGHLIGHT:	In this paper, we present an approach to learn multilingual sentence embeddings using a bi-directional dual-encoder with additive margin softmax.

747, TITLE:	Utilizing Non-Parallel Text for Style Transfer by Making Partial Comparisons
https://www.ijcai.org/proceedings/2019/747
AUTHORS:	Di Yin, Shujian Huang, Xin-Yu Dai, Jiajun Chen
HIGHLIGHT:	In this paper, we propose making partial comparisons to explicitly model the content and style correspondence of instances, respectively.

748, TITLE:	Graph-based Neural Sentence Ordering
https://www.ijcai.org/proceedings/2019/748
AUTHORS:	Yongjing Yin, Linfeng Song, Jinsong Su, Jiali Zeng, Chulun Zhou, Jiebo Luo
HIGHLIGHT:	In this paper, we propose a novel and flexible graph-based neural sentence ordering model, which adopts graph recurrent network \citep{Zhang:acl18} to accurately learn semantic representations of the sentences.

749, TITLE:	Refining Word Representations by Manifold Learning
https://www.ijcai.org/proceedings/2019/749
AUTHORS:	Chu Yonghe, Hongfei Lin, Liang Yang, Yufeng Diao, Shaowu Zhang, Fan Xiaochao
HIGHLIGHT:	In this paper, we propose a word vector refinement model to correct the pre-trained word embedding, which brings the similarity of words in Euclidean space closer to word semantics by using manifold learning.

750, TITLE:	Beyond Word Attention: Using Segment Attention in Neural Relation Extraction
https://www.ijcai.org/proceedings/2019/750
AUTHORS:	Bowen Yu, Zhenyu Zhang, Tingwen Liu, Bin Wang, Sujian Li, Quangang Li
HIGHLIGHT:	In this paper, we aim to incorporate such segment information into neural relation extractor.

751, TITLE:	Adapting BERT for Target-Oriented Multimodal Sentiment Classification
https://www.ijcai.org/proceedings/2019/751
AUTHORS:	Jianfei Yu, Jing Jiang
HIGHLIGHT:	Motivated by this observation and inspired by the recently proposed BERT architecture, we study Target-oriented Multimodal Sentiment Classification (TMSC) and propose a multimodal BERT architecture.

752, TITLE:	Modeling both Context- and Speaker-Sensitive Dependence for Emotion Detection in Multi-speaker Conversations
https://www.ijcai.org/proceedings/2019/752
AUTHORS:	Dong Zhang, Liangqing Wu, Changlong Sun, Shoushan Li, Qiaoming Zhu, Guodong Zhou
HIGHLIGHT:	In this paper, we focus on emotion detection in multi-speaker conversations instead of traditional two-speaker conversations in existing studies.

753, TITLE:	Extracting Entities and Events as a Single Task Using a Transition-Based Neural Model
https://www.ijcai.org/proceedings/2019/753
AUTHORS:	Junchi Zhang, Yanxia Qin, Yue Zhang, Mengchi Liu, Donghong Ji
HIGHLIGHT:	We build a first model to this end using a neural transition-based framework, incrementally predicting complex joint structures in a state-transition process.

754, TITLE:	Multi-view Knowledge Graph Embedding for Entity Alignment
https://www.ijcai.org/proceedings/2019/754
AUTHORS:	Qingheng Zhang, Zequn Sun, Wei Hu, Muhao Chen, Lingbing Guo, Yuzhong Qu

HIGHLIGHT:	In this paper, we propose a novel framework that unifies multiple views of entities to learn embeddings for entity alignment.

755, TITLE:	Quantum-Inspired Interactive Networks for Conversational Sentiment Analysis
https://www.ijcai.org/proceedings/2019/755
AUTHORS:	Yazhou Zhang, Qiuchi Li, Dawei Song, Peng Zhang, Panpan Wang
HIGHLIGHT:	In this paper, we aim to address this issue by modeling intrautterance and inter-utterance interaction dynamics.

756, TITLE:	A Document-grounded Matching Network for Response Selection in Retrieval-based Chatbots
https://www.ijcai.org/proceedings/2019/756
AUTHORS:	Xueliang Zhao, Chongyang Tao, Wei Wu, Can Xu, Dongyan Zhao, Rui Yan
HIGHLIGHT:	We present a document-grounded matching network (DGMN) for response selection that can power a knowledge-aware retrieval-based chatbot system.

757, TITLE:	Recurrent Neural Network for Text Classification with Hierarchical Multiscale Dense Connections
https://www.ijcai.org/proceedings/2019/757
AUTHORS:	Yi Zhao, Yanyan Shen, Junjie Yao
HIGHLIGHT:	Inspired by the advent of the dense connection pattern in advanced convolutional neural networks, we propose a simple yet effective recurrent architecture, named Hierarchical Mutiscale Densely Connected RNNs (HM-DenseRNNs), which: 1) enables direct access to the hidden states of all preceding recurrent units via dense connections, and 2) organizes multiple densely connected recurrent units into a hierarchical multi-scale structure, where the layers are updated at different scales.

758, TITLE:	RLTM: An Efficient Neural IR Framework for Long Documents
https://www.ijcai.org/proceedings/2019/758
AUTHORS:	Chen Zheng, Yu Sun, Shengxian Wan, Dianhai Yu
HIGHLIGHT:	This paper proposes a novel End-to-End neural ranking framework called Reinforced Long Text Matching (RLTM) which matches a query with long documents efficiently and effectively.

759, TITLE:	Dynamically Route Hierarchical Structure Representation to Attentive Capsule for Text Classification
https://www.ijcai.org/proceedings/2019/759
AUTHORS:	Wanshan Zheng, Zibin Zheng, Hai Wan, Chuan Chen
HIGHLIGHT:	In this paper, we propose a novel architecture that dynamically routes hierarchical structure feature to attentive capsule, named HAC.

760, TITLE:	Sequence Generation: From Both Sides to the Middle
https://www.ijcai.org/proceedings/2019/760
AUTHORS:	Long Zhou, Jiajun Zhang, Chengqing Zong, Heng Yu
HIGHLIGHT:	To alleviate these issues, we propose a synchronous bidirectional sequence generation (SBSG) model which predicts its outputs from both sides to the middle simultaneously.

761, TITLE:	Getting in Shape: Word Embedding SubSpaces
https://www.ijcai.org/proceedings/2019/761
AUTHORS:	Tianyuan Zhou, João Sedoc, Jordan Rodu
HIGHLIGHT:	We provide a theoretical framework and guarantees which aid in the understanding of empirical results.

762, TITLE:	A Span-based Joint Model for Opinion Target Extraction and Target Sentiment Classification
https://www.ijcai.org/proceedings/2019/762
AUTHORS:	Yan Zhou, Longtao Huang, Tao Guo, Jizhong Han, Songlin Hu
HIGHLIGHT:	In this paper, inspired by span-based methods in NLP, we propose a simple and effective joint model to conduct extraction and classification at span level rather than token level.

763, TITLE:	Earliest-Completion Scheduling of Contract Algorithms with End Guarantees
https://www.ijcai.org/proceedings/2019/763
AUTHORS:	Spyros Angelopoulos, Shendan Jin
HIGHLIGHT:	In this work we show how to optimize the time at which the system reaches a desired performance objective, while maintaining interruptible guarantees throughout the entire execution.

764, TITLE:	Finding Optimal Solutions in HTN Planning - A SAT-based Approach
https://www.ijcai.org/proceedings/2019/764
AUTHORS:	Gregor Behnke, Daniel Höller, Susanne Biundo

HIGHLIGHT:　　　　We show how the currently best-performing approach to HTN planning - the translation into propositional logic - can be utilised to find optimal plans.

765, TITLE:　　　　Faster Dynamic Controllability Checking in Temporal Networks with Integer Bounds
https://www.ijcai.org/proceedings/2019/765
AUTHORS:　　　　Nikhil Bhargava, Brian C. Williams
HIGHLIGHT:　　　　Our work improves the runtime of checking the dynamic controllability of STNUs with integer bounds to $O(\min(mn, m\sqrt{n}) \log N) + km + k^2 n + kn \log n)$.

766, TITLE:　　　　Regular Decision Processes: A Model for Non-Markovian Domains
https://www.ijcai.org/proceedings/2019/766
AUTHORS:　　　　Ronen I. Brafman, Giuseppe De Giacomo
HIGHLIGHT:　　　　We introduce and study Regular Decision Processes (RDPs), a new, compact, factored model for domains with non-Markovian dynamics and rewards.

767, TITLE:　　　　Strong Fully Observable Non-Deterministic Planning with LTL and LTLf Goals
https://www.ijcai.org/proceedings/2019/767
AUTHORS:　　　　Alberto Camacho, Sheila A. McIlraith
HIGHLIGHT:　　　　In this paper we introduce novel algorithms to compute so-called strong solutions, that guarantee goal satisfaction even in the absence of fairness.

768, TITLE:　　　　Counterexample-Guided Strategy Improvement for POMDPs Using Recurrent Neural Networks
https://www.ijcai.org/proceedings/2019/768
AUTHORS:　　　　Steven Carr, Nils Jansen, Ralf Wimmer, Alexandru Serban, Bernd Becker, Ufuk Topcu
HIGHLIGHT:　　　　We propose a novel method that combines techniques from machine learning and formal verification.

769, TITLE:　　　　Influence of State-Variable Constraints on Partially Observable Monte Carlo Planning
https://www.ijcai.org/proceedings/2019/769
AUTHORS:　　　　Alberto Castellini, Georgios Chalkiadakis, Alessandro Farinelli
HIGHLIGHT:　　　　In this paper, we propose the introduction of prior knowledge in the form of (probabilistic) relationships among discrete state-variables, for online planning based on the well-known POMCP algorithm.

770, TITLE:　　　　Online Probabilistic Goal Recognition over Nominal Models
https://www.ijcai.org/proceedings/2019/770
AUTHORS:　　　　Ramon Fraga Pereira, Mor Vered, Felipe Meneguzzi, Miquel Ramírez
HIGHLIGHT:　　　　This paper revisits probabilistic, model-based goal recognition to study the implications of the use of nominal models to estimate the posterior probability distribution over a finite set of hypothetical goals.

771, TITLE:　　　　Generalized Potential Heuristics for Classical Planning
https://www.ijcai.org/proceedings/2019/771
AUTHORS:　　　　Guillem Francès, Augusto B. Corrêa, Cedric Geissmann, Florian Pommerening
HIGHLIGHT:　　　　In this paper, we show that several interesting planning domains possess compact generalized heuristics that can guide a greedy search in guaranteed polynomial time to the goal, and which work for any instance of the domain.

772, TITLE:　　　　Subgoal-Based Temporal Abstraction in Monte-Carlo Tree Search
https://www.ijcai.org/proceedings/2019/772
AUTHORS:　　　　Thomas Gabor, Jan Peter, Thomy Phan, Christian Meyer, Claudia Linnhoff-Popien
HIGHLIGHT:　　　　We propose an approach to general subgoal-based temporal abstraction in MCTS.

773, TITLE:　　　　Fair Online Allocation of Perishable Goods and its Application to Electric Vehicle Charging
https://www.ijcai.org/proceedings/2019/773
AUTHORS:　　　　Enrico H. Gerding, Alvaro Perez-Diaz, Haris Aziz, Serge Gaspers, Antonia Marcu, Nicholas Mattei, Toby Walsh
HIGHLIGHT:　　　　We consider mechanisms for the online allocation of perishable resources such as energy or computational power.

774, TITLE:　　　　Dynamic logic of parallel propositional assignments and its applications to planning
https://www.ijcai.org/proceedings/2019/774
AUTHORS:　　　　Andreas Herzig, Frédéric Maris, Julien Vianey

HIGHLIGHT: We introduce a dynamic logic with parallel composition and two kinds of nondeterministic composition, exclusive and inclusive.

775, TITLE: Approximability of Constant-horizon Constrained POMDP
https://www.ijcai.org/proceedings/2019/775
AUTHORS: Majid Khonji, Ashkan Jasour, Brian Williams
HIGHLIGHT: Our first contribution is a reduction from CC-POMDP to C-POMDP and a novel Integer Linear Programming (ILP) formulation.

776, TITLE: Bayesian Inference of Linear Temporal Logic Specifications for Contrastive Explanations
https://www.ijcai.org/proceedings/2019/776
AUTHORS: Joseph Kim, Christian Muise, Ankit Shah, Shubham Agarwal, Julie Shah
HIGHLIGHT: In this paper, we examine the problem of inferring specifications that describe temporal differences between two sets of plan traces.

777, TITLE: Partitioning Techniques in LTLf Synthesis
https://www.ijcai.org/proceedings/2019/777
AUTHORS: Lucas Martinelli Tabajara, Moshe Y. Vardi
HIGHLIGHT: In this work, however, we expose fundamental limitations of partitioning that hinder its effective application to symbolic LTLf synthesis.

778, TITLE: Adaptive Thompson Sampling Stacks for Memory Bounded Open-Loop Planning
https://www.ijcai.org/proceedings/2019/778
AUTHORS: Thomy Phan, Thomas Gabor, Robert Müller, Christoph Roch, Claudia Linnhoff-Popien
HIGHLIGHT: We propose Stable Yet Memory Bounded Open-Loop (SYMBOL) planning, a general memory bounded approach to partially observable open-loop planning.

779, TITLE: A Novel Distribution-Embedded Neural Network for Sensor-Based Activity Recognition
https://www.ijcai.org/proceedings/2019/779
AUTHORS: Hangwei Qian, Sinno Jialin Pan, Bingshui Da, Chunyan Miao
HIGHLIGHT: In this paper, we propose a novel deep learning model to automatically learn meaningful features including statistical features, temporal features and spatial correlation features for activity recognition in a unified framework.

780, TITLE: Pattern Selection for Optimal Classical Planning with Saturated Cost Partitioning
https://www.ijcai.org/proceedings/2019/780
AUTHORS: Jendrik Seipp
HIGHLIGHT: We introduce a new method that uses saturated cost partitioning to select patterns and show that it outperforms all existing pattern selection algorithms.

781, TITLE: Scheduling Jobs with Stochastic Processing Time on Parallel Identical Machines
https://www.ijcai.org/proceedings/2019/781
AUTHORS: Richard Stec, Antonin Novak, Premysl Sucha, Zdenek Hanzalek
HIGHLIGHT: In this paper, we study a classical parallel machine scheduling problem where the processing time of jobs is given by a normal distribution.

782, TITLE: On Computational Complexity of Pickup-and-Delivery Problems with Precedence Constraints or Time Windows
https://www.ijcai.org/proceedings/2019/782
AUTHORS: Xing Tan, Jimmy Xiangji Huang
HIGHLIGHT: That is, we propose a local-search formalism and algorithm for solving PDPC problems in particular.

783, TITLE: Merge-and-Shrink Task Reformulation for Classical Planning
https://www.ijcai.org/proceedings/2019/783
AUTHORS: Álvaro Torralba, Silvan Sievers
HIGHLIGHT: In this paper, we represent tasks as factored transition systems (FTS), and use the merge-and-shrink (M&S) framework for task reformulation for optimal and satisficing planning.

784, TITLE: Steady-State Policy Synthesis for Verifiable Control
https://www.ijcai.org/proceedings/2019/784
AUTHORS: Alvaro Velasquez

HIGHLIGHT: In this paper, we introduce the Steady-State Policy Synthesis (SSPS) problem which consists of ?nding a stochastic decision-making policy that maximizes expected rewards while satisfying a set of asymptotic behavioral speci?cations.

785, TITLE: Energy-Efficient Slithering Gait Exploration for a Snake-Like Robot Based on Reinforcement Learning
https://www.ijcai.org/proceedings/2019/785
AUTHORS: Zhenshan Bing, Christian Lemke, Zhuangyi Jiang, Kai Huang, Alois Knoll
HIGHLIGHT: In this work, we present a novel approach for designing an energy-efficient slithering gait for a snake-like robot using a model-free reinforcement learning (RL) algorithm.

786, TITLE: The Parameterized Complexity of Motion Planning for Snake-Like Robots
https://www.ijcai.org/proceedings/2019/786
AUTHORS: Siddharth Gupta, Guy Sa'ar, Meirav Zehavi
HIGHLIGHT: Given a ``snake-like'' robot with initial and final positions in an environment modeled by a graph, our goal is to decide whether the robot can reach the final position from the initial position without intersecting itself.

787, TITLE: Unsupervised Learning of Monocular Depth and Ego-Motion using Conditional PatchGANs
https://www.ijcai.org/proceedings/2019/787
AUTHORS: Madhu Vankadari, Swagat Kumar, Anima Majumder, Kaushik Das
HIGHLIGHT: This paper presents a new GAN-based deep learning framework for estimating absolute scale awaredepth and ego motion from monocular images using a completely unsupervised mode of learning.

788, TITLE: Region Deformer Networks for Unsupervised Depth Estimation from Unconstrained Monocular Videos
https://www.ijcai.org/proceedings/2019/788
AUTHORS: Haofei Xu, Jianmin Zheng, Jianfei Cai, Juyong Zhang
HIGHLIGHT: In this paper, we propose a new learning based method consisting of DepthNet, PoseNet and Region Deformer Networks (RDN) to estimate depth from unconstrained monocular videos without ground truth supervision.

789, TITLE: Statistical Guarantees for the Robustness of Bayesian Neural Networks
https://www.ijcai.org/proceedings/2019/789
AUTHORS: Luca Cardelli, Marta Kwiatkowska, Luca Laurenti, Nicola Paoletti, Andrea Patane, Matthew Wicker
HIGHLIGHT: We introduce a probabilistic robustness measure for Bayesian Neural Networks (BNNs), defined as the probability that, given a test point, there exists a point within a bounded set such that the BNN prediction differs between the two.

790, TITLE: Lifted Message Passing for Hybrid Probabilistic Inference
https://www.ijcai.org/proceedings/2019/790
AUTHORS: Yuqiao Chen, Nicholas Ruozzi, Sriraam Natarajan
HIGHLIGHT: In this work, we consider the problem of lifted inference in MLNs with continuous or both discrete and continuous groundings.

791, TITLE: Bayesian Parameter Estimation for Nonlinear Dynamics Using Sensitivity Analysis
https://www.ijcai.org/proceedings/2019/791
AUTHORS: Yi Chou, Sriram Sankaranarayanan
HIGHLIGHT: We investigate approximate Bayesian inference techniques for nonlinear systems described by ordinary differential equation (ODE) models.

792, TITLE: Thompson Sampling on Symmetric Alpha-Stable Bandits
https://www.ijcai.org/proceedings/2019/792
AUTHORS: Abhimanyu Dubey, Alex `Sandy' Pentland
HIGHLIGHT: In this paper, we revisit the Thompson Sampling algorithm under rewards drawn from symmetric alpha-stable distributions, which are a class of heavy-tailed probability distributions utilized in finance and economics, in problems such as modeling stock prices and human behavior.

793, TITLE: On Constrained Open-World Probabilistic Databases
https://www.ijcai.org/proceedings/2019/793
AUTHORS: Tal Friedman, Guy Van den Broeck
HIGHLIGHT: We propose overcoming these issues by using constraints to restrict this open world.

794, TITLE: An End-to-End Community Detection Model: Integrating LDA into Markov Random Field via Factor Graph
https://www.ijcai.org/proceedings/2019/794
AUTHORS: Dongxiao He, Wenze Song, Di Jin, Zhiyong Feng, Yuxiao Huang

HIGHLIGHT: This paper integrates LDA into MRF to form an end-to-end learning system where their parameters can be trained jointly.

795, TITLE: Exact Bernoulli Scan Statistics using Binary Decision Diagrams
https://www.ijcai.org/proceedings/2019/795
AUTHORS: Masakazu Ishihata, Takanori Maehara
HIGHLIGHT: In this study, we restrict our attention to the case that the number of data points is moderately small (e.g., 50), the outcome is binary, and the underlying combinatorial structure is represented by a zero-suppressed binary decision diagram (ZDD), and consider the problem of computing the p-value of the combinatorial scan statistics exactly.

796, TITLE: Hyper-parameter Tuning under a Budget Constraint
https://www.ijcai.org/proceedings/2019/796
AUTHORS: Zhiyun Lu, Liyu Chen, Chao-Kai Chiang, Fei Sha
HIGHLIGHT: We formulate the task into a sequential decision making problem and propose a solution, which uses a Bayesian belief model to predict future performances, and an action-value function to plan and select the next configuration to run.

797, TITLE: Cutset Bayesian Networks: A New Representation for Learning Rao-Blackwellised Graphical Models
https://www.ijcai.org/proceedings/2019/797
AUTHORS: Tahrima Rahman, Shasha Jin, Vibhav Gogate
HIGHLIGHT: In this paper, we seek to further explore this trade-off between generalization performance and inference accuracy by proposing a novel, partially tractable representation called cutset Bayesian networks (CBNs).

798, TITLE: Ranked Programming
https://www.ijcai.org/proceedings/2019/798
AUTHORS: Tjitze Rienstra
HIGHLIGHT: In this paper we combine probabilistic programming methodology with ranking theory and develop a ranked programming language.

799, TITLE: ISLF: Interest Shift and Latent Factors Combination Model for Session-based Recommendation
https://www.ijcai.org/proceedings/2019/799
AUTHORS: Jing Song, Hong Shen, Zijing Ou, Junyi Zhang, Teng Xiao, Shangsong Liang
HIGHLIGHT: In this paper, we propose a novel model, Interest Shift and Latent Factors Combination Model (ISLF), which can capture the user's main intention by taking into account the user's interest shift (i.e. long-term and short-term interest) and latent factors simultaneously.

800, TITLE: DiffChaser: Detecting Disagreements for Deep Neural Networks
https://www.ijcai.org/proceedings/2019/800
AUTHORS: Xiaofei Xie, Lei Ma, Haijun Wang, Yuekang Li, Yang Liu, Xiaohong Li
HIGHLIGHT: This paper proposes DiffChaser, an automated black-box testing framework to detect untargeted/targeted disagreements between version variants of a DNN.

801, TITLE: SparseSense: Human Activity Recognition from Highly Sparse Sensor Data-streams Using Set-based Neural Networks
https://www.ijcai.org/proceedings/2019/801
AUTHORS: Alireza Abedin, S. Hamid Rezatofighi, Qinfeng Shi, Damith C. Ranasinghe
HIGHLIGHT: In this paper, we rigorously explore the problem of learning activity recognition models from temporally sparse data.

802, TITLE: Governance by Glass-Box: Implementing Transparent Moral Bounds for AI Behaviour
https://www.ijcai.org/proceedings/2019/802
AUTHORS: Andrea Aler Tubella, Andreas Theodorou, Frank Dignum, Virginia Dignum
HIGHLIGHT: In this paper, we present an approach to evaluate the moral bounds of an AI system based on the monitoring of its inputs and outputs.

803, TITLE: Decision Making for Improving Maritime Traffic Safety Using Constraint Programming
https://www.ijcai.org/proceedings/2019/803
AUTHORS: Saumya Bhatnagar, Akshat Kumar, Hoong Chuin Lau
HIGHLIGHT: To achieve this, we a) formalize the decision model for traffic hotspot mitigation including realistic maritime navigational features and constraints through consultations with domain experts; and b) develop a constraint programming based scheduling approach to mitigate hotspots.

804, TITLE:	Evaluating the Interpretability of the Knowledge Compilation Map: Communicating Logical Statements Effectively
https://www.ijcai.org/proceedings/2019/804
AUTHORS:	Serena Booth, Christian Muise, Julie Shah
HIGHLIGHT:	We find that domain, formula size, and negated logical connectives significantly affect comprehension while formula properties typically associated with interpretability are not strong predictors of human ability to comprehend the theory.

805, TITLE:	AI-powered Posture Training: Application of Machine Learning in Sitting Posture Recognition Using the LifeChair Smart Cushion
https://www.ijcai.org/proceedings/2019/805
AUTHORS:	Katia Bourahmoune, Toshiyuki Amagasa
HIGHLIGHT:	We present the application of a sitting posture training smart cushion called LifeChair that combines a novel pressure sensing technology, a smartphone app interface and machine learning (ML) for real-time sitting posture recognition and seated stretching guidance.

806, TITLE:	Improving Law Enforcement Daily Deployment Through Machine Learning-Informed Optimization under Uncertainty
https://www.ijcai.org/proceedings/2019/806
AUTHORS:	Jonathan Chase, Duc Thien Nguyen, Haiyang Sun, Hoong Chuin Lau
HIGHLIGHT:	To efficiently minimize the response times of a law enforcement agency operating in a dense urban environment with limited manpower, we consider in this paper the problem of optimizing the spatial and temporal deployment of law enforcement agents to predefined patrol regions in a real-world scenario informed by machine learning.

807, TITLE:	Risk Assessment for Networked-guarantee Loans Using High-order Graph Attention Representation
https://www.ijcai.org/proceedings/2019/807
AUTHORS:	Dawei Cheng, Yi Tu, Zhenwei Ma, Zhibin Niu, Liqing Zhang
HIGHLIGHT:	In this paper, we propose a high-order graph attention representation method (HGAR) to learn the embedding of guarantee networks.

808, TITLE:	PI-Bully: Personalized Cyberbullying Detection with Peer Influence
https://www.ijcai.org/proceedings/2019/808
AUTHORS:	Lu Cheng, Jundong Li, Yasin Silva, Deborah Hall, Huan Liu
HIGHLIGHT:	In this paper, we propose a personalized cyberbullying detection framework, PI-Bully, that draws on empirical findings from psychology highlighting unique characteristics of victims and bullies and peer influence from like-minded users as predictors of cyberbullying behaviors.

809, TITLE:	The Price of Local Fairness in Multistage Selection
https://www.ijcai.org/proceedings/2019/809
AUTHORS:	Vitalii Emelianov, George Arvanitakis, Nicolas Gast, Krishna Gummadi, Patrick Loiseau
HIGHLIGHT:	In this paper we study fairness in k-stage selection problems where additional features are observed at every stage.

810, TITLE:	Enhancing Stock Movement Prediction with Adversarial Training
https://www.ijcai.org/proceedings/2019/810
AUTHORS:	Fuli Feng, Huimin Chen, Xiangnan He, Ji Ding, Maosong Sun, Tat-Seng Chua
HIGHLIGHT:	The key novelty is that we propose to employ adversarial training to improve the generalization of a neural network prediction model.

811, TITLE:	Safe Contextual Bayesian Optimization for Sustainable Room Temperature PID Control Tuning
https://www.ijcai.org/proceedings/2019/811
AUTHORS:	Marcello Fiducioso, Sebastian Curi, Benedikt Schumacher, Markus Gwerder, Andreas Krause
HIGHLIGHT:	We use Safe Contextual Bayesian Optimization to optimize the PID parameters without human intervention.

812, TITLE:	DDL: Deep Dictionary Learning for Predictive Phenotyping
https://www.ijcai.org/proceedings/2019/812
AUTHORS:	Tianfan Fu, Trong Nghia Hoang, Cao Xiao, Jimeng Sun
HIGHLIGHT:	To address this label-insufficient challenge, we propose a deep dictionary learning framework (DDL) for phenotyping, which utilizes unlabeled data as a complementary source of information to generate a better, more succinct data representation.

813, TITLE: Improving Customer Satisfaction in Bike Sharing Systems through Dynamic Repositioning
https://www.ijcai.org/proceedings/2019/813
AUTHORS: Supriyo Ghosh, Jing Yu Koh, Patrick Jaillet
HIGHLIGHT: To bridge this gap, we propose a dynamic bike repositioning approach based on a probabilistic satisficing method which uses the uncertain demand parameters that are learnt from historical data.

814, TITLE: mdfa: Multi-Differential Fairness Auditor for Black Box Classifiers
https://www.ijcai.org/proceedings/2019/814
AUTHORS: Xavier Gitiaux, Huzefa Rangwala
HIGHLIGHT: This paper presents a new tool, mdfa that identifies the characteristics of the victims of a classifier's discrimination.

815, TITLE: CounterFactual Regression with Importance Sampling Weights
https://www.ijcai.org/proceedings/2019/815
AUTHORS: Negar Hassanpour, Russell Greiner
HIGHLIGHT: In this work, we borrow ideas from domain adaptation to address the distributional shift between the source (outcome of the administered treatment, appearing in the observed training data) and target (outcome of the alternative treatment) that exists due to selection bias.

816, TITLE: MINA: Multilevel Knowledge-Guided Attention for Modeling Electrocardiography Signals
https://www.ijcai.org/proceedings/2019/816
AUTHORS: Shenda Hong, Cao Xiao, Tengfei Ma, Hongyan Li, Jimeng Sun
HIGHLIGHT: In this work, we propose MultIlevel kNowledge-guided Attention networks (MINA) that predict heart diseases from ECG signals with intuitive explanation aligned with medical knowledge.

817, TITLE: RDPD: Rich Data Helps Poor Data via Imitation
https://www.ijcai.org/proceedings/2019/817
AUTHORS: Shenda Hong, Cao Xiao, Trong Nghia Hoang, Tengfei Ma, Hongyan Li, Jimeng Sun
HIGHLIGHT: To deploy a competitive model in a poor-data environment without requiring direct access to multi-modal data acquired from a rich-data environment, this paper develops and presents a knowledge distillation (KD) method (RDPD) to enhance a predictive model trained on poor data using knowledge distilled from a high-complexity model trained on rich, private data.

818, TITLE: Systematic Conservation Planning for Sustainable Land-use Policies: A Constrained Partitioning Approach to Reserve Selection and Design.
https://www.ijcai.org/proceedings/2019/818
AUTHORS: Dimitri Justeau-Allaire, Philippe Vismara, Philippe Birnbaum, Xavier Lorca
HIGHLIGHT: This paper introduces a partitioning approach based on Constraint Programming (CP) for the reserve selection and design problem, dealing with both coverage and complex spatial constraints.

819, TITLE: Truly Batch Apprenticeship Learning with Deep Successor Features
https://www.ijcai.org/proceedings/2019/819
AUTHORS: Donghun Lee, Srivatsan Srinivasan, Finale Doshi-Velez
HIGHLIGHT: We introduce a novel apprenticeship learning algorithm to learn an expert's underlying reward structure in off-policy model-free batch settings.

820, TITLE: Scribble-to-Painting Transformation with Multi-Task Generative Adversarial Networks
https://www.ijcai.org/proceedings/2019/820
AUTHORS: Jinning Li, Yexiang Xue
HIGHLIGHT: We propose the Dual Scribble-to-Painting Network (DSP-Net), which is able to produce artistic paintings based on user-generated scribbles.

821, TITLE: Diversity-Inducing Policy Gradient: Using Maximum Mean Discrepancy to Find a Set of Diverse Policies
https://www.ijcai.org/proceedings/2019/821
AUTHORS: Muhammad Masood, Finale Doshi-Velez
HIGHLIGHT: In this work, we formalize the difference between policies as a difference between the distribution of trajectories induced by each policy, which encourages diversity with respect to both state visitation and action choices.

822, TITLE: KitcheNette: Predicting and Ranking Food Ingredient Pairings using Siamese Neural Network
https://www.ijcai.org/proceedings/2019/822
AUTHORS: Donghyeon Park, Keonwoo Kim, Yonggyu Park, Jungwoon Shin, Jaewoo Kang

HIGHLIGHT: In this work, we propose KitcheNette which is a model that predicts food ingredient pairing scores and recommends optimal ingredient pairings.

823, TITLE: MNN: Multimodal Attentional Neural Networks for Diagnosis Prediction
https://www.ijcai.org/proceedings/2019/823
AUTHORS: Zhi Qiao, Xian Wu, Shen Ge, Wei Fan
HIGHLIGHT: To increase the robustness towards noisy data, we introduce textual clinical notes in addition to medical codes.

824, TITLE: Global Robustness Evaluation of Deep Neural Networks with Provable Guarantees for the Hamming Distance
https://www.ijcai.org/proceedings/2019/824
AUTHORS: Wenjie Ruan, Min Wu, Youcheng Sun, Xiaowei Huang, Daniel Kroening, Marta Kwiatkowska
HIGHLIGHT: We define global robustness as an expectation of the maximal safe radius over a test dataset, and develop an algorithm to approximate the global robustness measure by iteratively computing its lower and upper bounds.

825, TITLE: Pre-training of Graph Augmented Transformers for Medication Recommendation
https://www.ijcai.org/proceedings/2019/825
AUTHORS: Junyuan Shang, Tengfei Ma, Cao Xiao, Jimeng Sun
HIGHLIGHT: To address these challenges, we propose G-BERT, a new model to combine the power of Graph Neural Networks (GNNs) and BERT (Bidirectional Encoder Representations from Transformers) for medical code representation and medication recommendation.

826, TITLE: Three-quarter Sibling Regression for Denoising Observational Data
https://www.ijcai.org/proceedings/2019/826
AUTHORS: Shiv Shankar, Daniel Sheldon, Tao Sun, John Pickering, Thomas G. Dietterich
HIGHLIGHT: We present a technique called 'three-quarter sibling regression' to partially overcome this limitation.

827, TITLE: Daytime Sleepiness Level Prediction Using Respiratory Information
https://www.ijcai.org/proceedings/2019/827
AUTHORS: Kazuhiko Shinoda, Masahiko Yoshii, Hayato Yamaguchi, Hirotaka Kaji
HIGHLIGHT: In this paper, we present the first step towards the continuous sleepiness tracking in daily living situations.

828, TITLE: Simultaneous Prediction Intervals for Patient-Specific Survival Curves
https://www.ijcai.org/proceedings/2019/828
AUTHORS: Samuel Sokota, Ryan D'Orazio, Khurram Javed, Humza Haider, Russell Greiner
HIGHLIGHT: In this paper we demonstrate that an existing method for estimating simultaneous prediction intervals from samples can easily be adapted for patient-specific survival curve analysis and yields accurate results.

829, TITLE: Controllable Neural Story Plot Generation via Reward Shaping
https://www.ijcai.org/proceedings/2019/829
AUTHORS: Pradyumna Tambwekar, Murtaza Dhuliawala, Lara J. Martin, Animesh Mehta, Brent Harrison, Mark O. Riedl
HIGHLIGHT: We present a reward-shaping technique that analyzes a story corpus and produces intermediate rewards that are backpropagated into a pre-trained LM in order to guide the model toward a given goal.

830, TITLE: Bidirectional Active Learning with Gold-Instance-Based Human Training
https://www.ijcai.org/proceedings/2019/830
AUTHORS: Feilong Tang
HIGHLIGHT: In this paper, we propose a Bidirectional Active Learning with human Training (BALT) model that can enhance human related expertise during labeling and improve relabelingquality accordingly.

831, TITLE: Group-Fairness in Influence Maximization
https://www.ijcai.org/proceedings/2019/831
AUTHORS: Alan Tsang, Bryan Wilder, Eric Rice, Milind Tambe, Yair Zick
HIGHLIGHT: Drawing on legal and game-theoretic concepts, we introduce formal definitions of fairness in influence maximization.

832, TITLE: Failure-Scenario Maker for Rule-Based Agent using Multi-agent Adversarial Reinforcement Learning and its Application to Autonomous Driving
https://www.ijcai.org/proceedings/2019/832
AUTHORS: Akifumi Wachi

HIGHLIGHT:	We propose a method for efficiently finding failure scenarios; this method trains the adversarial agents using multi-agent reinforcement learning such that the tested rule-based agent fails.

833, TITLE:	Protecting Neural Networks with Hierarchical Random Switching: Towards Better Robustness-Accuracy Trade-off for Stochastic Defenses
https://www.ijcai.org/proceedings/2019/833
AUTHORS:	Xiao Wang, Siyue Wang, Pin-Yu Chen, Yanzhi Wang, Brian Kulis, Xue Lin, Sang Chin
HIGHLIGHT:	We propose Defense Efficiency Score (DES), a comprehensive metric that measures the gain in unsuccessful attack attempts at the cost of drop in test accuracy of any defense.

834, TITLE:	Who Should Pay the Cost: A Game-theoretic Model for Government Subsidized Investments to Improve National Cybersecurity
https://www.ijcai.org/proceedings/2019/834
AUTHORS:	Xinrun Wang, Bo An, Hau Chan
HIGHLIGHT:	To tackle the government's allocation problem, we introduce a Stackelberg game-theoretic model where the government first commits to an allocation and the companies/users and attacker simultaneously determine their protection and attack (pure or mixed) strategies, respectively.

835, TITLE:	Automatic Grassland Degradation Estimation Using Deep Learning
https://www.ijcai.org/proceedings/2019/835
AUTHORS:	Xiyu Yan, Yong Jiang, Shuai Chen, Zihao He, Chunmei Li, Shu-Tao Xia, Tao Dai, Shuo Dong, Feng Zheng
HIGHLIGHT:	Based on AGDE-Dataset, we are able to propose a brand new scheme to automatically estimate grassland degradation, which mainly consists of two components. 1) Semantic segmentation: we design a deep neural network with an improved encoder-decoder structure to implement semantic segmentation of grassland images. In addition, we propose a novel Focal-Hinge Loss to alleviate the class imbalance of semantics in the training stage. 2) Degradation estimation: we provide the estimation of grassland degradation based on the results of semantic segmentation.

836, TITLE:	Balanced Ranking with Diversity Constraints
https://www.ijcai.org/proceedings/2019/836
AUTHORS:	Ke Yang, Vasilis Gkatzelis, Julia Stoyanovich
HIGHLIGHT:	In this paper we study this phenomenon using datasets that comprise multiple sensitive attributes.

837, TITLE:	A Decomposition Approach for Urban Anomaly Detection Across Spatiotemporal Data
https://www.ijcai.org/proceedings/2019/837
AUTHORS:	Mingyang Zhang, Tong Li, Hongzhi Shi, Yong Li, Pan Hui
HIGHLIGHT:	In this paper, we propose a decomposing approach to address these two challenges.

838, TITLE:	Learning Interpretable Relational Structures of Hinge-loss Markov Random Fields
https://www.ijcai.org/proceedings/2019/838
AUTHORS:	Yue Zhang, Arti Ramesh
HIGHLIGHT:	In this work, we present an asynchronous deep reinforcement learning algorithm to automatically learn HL-MRF clause structures.

839, TITLE:	K-margin-based Residual-Convolution-Recurrent Neural Network for Atrial Fibrillation Detection
https://www.ijcai.org/proceedings/2019/839
AUTHORS:	Yuxi Zhou, Shenda Hong, Junyuan Shang, Meng Wu, Qingyun Wang, Hongyan Li, Junqing Xie
HIGHLIGHT:	In this paper, we propose a K-margin-based Residual-Convolution-Recurrent neural network (K-margin-based RCR-net) for AF detection from noisy ECGs.

840, TITLE:	LTL and Beyond: Formal Languages for Reward Function Specification in Reinforcement Learning
https://www.ijcai.org/proceedings/2019/840
AUTHORS:	Alberto Camacho, Rodrigo Toro Icarte, Toryn Q. Klassen, Richard Valenzano, Sheila A. McIlraith
HIGHLIGHT:	We propose using reward machines (RMs), which are automata-based representations that expose reward function structure, as a normal form representation for reward functions.

841, TITLE:	Playgol: Learning Programs Through Play
https://www.ijcai.org/proceedings/2019/841
AUTHORS:	Andrew Cropper
HIGHLIGHT:	We introduce the analogous idea of learning programs through play.

842, TITLE: Learning Relational Representations with Auto-encoding Logic Programs
https://www.ijcai.org/proceedings/2019/842
AUTHORS: Sebastijan Dumancic, Tias Guns, Wannes Meert, Hendrik Blockeel
HIGHLIGHT: This paper introduces a novel framework for relational representation learning that combines the best of both worlds.

843, TITLE: A Comparative Study of Distributional and Symbolic Paradigms for Relational Learning
https://www.ijcai.org/proceedings/2019/843
AUTHORS: Sebastijan Dumancic, Alberto Garcia-Duran, Mathias Niepert
HIGHLIGHT: In this work, we compare distributional and symbolic relational learning approaches on various standard relational classification and knowledge base completion tasks.

844, TITLE: Learning Hierarchical Symbolic Representations to Support Interactive Task Learning and Knowledge Transfer
https://www.ijcai.org/proceedings/2019/844
AUTHORS: James R. Kirk, John E. Laird
HIGHLIGHT: We present a learning strategy embodied in an ITL agent that interactively learns in one shot the meaning of task concepts for 40 games and puzzles in ambiguous scenarios.

845, TITLE: EL Embeddings: Geometric Construction of Models for the Description Logic EL++
https://www.ijcai.org/proceedings/2019/845
AUTHORS: Maxat Kulmanov, Wang Liu-Wei, Yuan Yan, Robert Hoehndorf
HIGHLIGHT: We address the problem of finding vector space embeddings for theories in the Description Logic ??

846, TITLE: How Well Do Machines Perform on IQ tests: a Comparison Study on a Large-Scale Dataset
https://www.ijcai.org/proceedings/2019/846
AUTHORS: Yusen Liu, Fangyuan He, Haodi Zhang, Guozheng Rao, Zhiyong Feng, Yi Zhou
HIGHLIGHT: To address this issue, we create IQ10k, a large-scale dataset that contains more than 10,000 IQ test questions.

847, TITLE: Synthesizing Datalog Programs using Numerical Relaxation
https://www.ijcai.org/proceedings/2019/847
AUTHORS: Xujie Si, Mukund Raghothaman, Kihong Heo, Mayur Naik
HIGHLIGHT: In this paper, we present Difflog, a technique to extend the logic programming language Datalog to the continuous setting.