### Wed Dec 5th

Reproducible, Reusable, and Robust Reinforcement Learning

Wed Dec 5th 08:30 – 09:20 AM @ Rooms 220 CDE Invited Talk (Posner Lecture) – In Wed Invited Talk 1 Joelle Pineau

Coffee Break

Wed Dec 5th 09:20 - 09:45 AM @ Break -

### In Wed Track 1 – Session 1

Wed Dec 5th 09:45 – 09:50 AM @ Room 220 CD – Wed Dec 5th 10:40 – 10:45 AM @ Room 220 CD

A Smoothed Analysis of the Greedy Algorithm for the Linear Contextual Bandit Problem

Wed Dec 5th 09:45 - 09:50 AM @ Room 220 CD

 $Spotlight-In\ Wed\ Track\ 1-Session\ 1$ 

Sampath Kannan  $\cdot$  Jamie Morgenstern  $\cdot$  Aaron Roth  $\cdot$  Bo Waggoner  $\cdot$  Zhiwei Steven Wu

Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #159

Almost Optimal Algorithms for Linear Stochastic Bandits with Heavy-Tailed Payoffs

Wed Dec 5th 09:50 – 09:55 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Han Shao · Xiaotian Yu · Irwin King · Michael Lyu Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB

End-to-End Differentiable Physics for Learning and Control

Wed Dec 5th 09:55 – 10:00 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Filipe de Avila Belbute-Peres · Kevin Smith · Kelsey Allen · Josh Tenenbaum · J. Zico Kolter Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB

Near Optimal Exploration-Exploitation in Non-Communicating Markov Decision Processes

Wed Dec 5th 10:00 – 10:05 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Ronan Fruit · Matteo Pirotta · Alessandro Lazaric Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #161

Exploration in Structured Reinforcement Learning

Wed Dec 5th 10:05 – 10:20 AM @ Room 220 CD Oral – In Wed Track 1 – Session 1 Jungseul Ok · Alexandre Proutiere · Damianos Tranos Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #160

Acceleration through Optimistic No-Regret Dynamics

Wed Dec 5th 10:20 – 10:25 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Jun-Kun Wang  $\cdot$  Jacob Abernethy Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #156

On Oracle-Efficient PAC RL with Rich Observations

Wed Dec 5th 10:25 – 10:30 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Christoph Dann · Nan Jiang · Akshay Krishnamurthy · Alekh Agarwal · John Langford · Robert Schapire Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #111

Constant Regret, Generalized Mixability, and Mirror Descent

Wed Dec 5th 10:30 – 10:35 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Zakaria Mhammedi · Robert Williamson Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #96

Efficient Online Portfolio with Logarithmic Regret

Wed Dec 5th 10:35 – 10:40 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Haipeng Luo · Chen-Yu Wei · Kai Zheng Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #157

Solving Large Sequential Games with the Excessive Gap Technique

Wed Dec 5th 10:40 – 10:45 AM @ Room 220 CD Spotlight – In Wed Track 1 – Session 1 Christian Kroer  $\cdot$  Gabriele Farina  $\cdot$  Tuomas Sandholm Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #77

### In Wed Track 2 – Session 1

Wed Dec 5th 09:45 - 09:50 AM @ Room 220 E - Wed Dec 5th 10:40 - 10:45 AM @ Room 220 E

Deep Network for the Integrated 3D Sensing of Multiple People in Natural Images

Wed Dec 5th 09:45 – 09:50 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Andrei Zanfir · Elisabeta Marinoiu · Mihai Zanfir · Alin-Ionut Popa · Cristian Sminchisescu Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #120

Delta-encoder: an effective sample synthesis method for few-shot object recognition

Wed Dec 5th 09:50 – 09:55 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Eli Schwartz · Leonid Karlinsky · Joseph Shtok · Sivan Harary · Mattias Marder · Abhishek Kumar · Rogerio Feris · Raja Giryes · Alex Bronstein Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #25

Text-Adaptive Generative Adversarial Networks: Manipulating Images with Natural Language

Wed Dec 5th 09:55 – 10:00 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Seonghyeon Nam·Yunji Kim·Seon Joo Kim Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #126

Neighbourhood Consensus Networks

Wed Dec 5th 10:00 – 10:05 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Ignacio Rocco · Mircea Cimpoi · Relja Arandjelovi? · Akihiko Torii · Tomas Pajdla · Josef Sivic Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB

Visual Memory for Robust Path Following

Wed Dec 5th 10:05 – 10:20 AM @ Room 220 E Oral – In Wed Track 2 – Session 1 Ashish Kumar · Saurabh Gupta · David Fouhey · Sergey Levine · Jitendra Malik Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #122

Recurrent Transformer Networks for Semantic Correspondence

Wed Dec 5th 10:20 – 10:25 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Seungryong Kim · Stephen Lin · SANG RYUL JEON · Dongbo Min · Kwanghoon Sohn Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #119

# Sequential Attend, Infer, Repeat: Generative Modelling of Moving Objects

Wed Dec 5th 10:25 – 10:30 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Adam Kosiorek · Hyunjik Kim · Yee Whye Teh · Ingmar Posner Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #24

#### Sanity Checks for Saliency Maps

Wed Dec 5th 10:30 – 10:35 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Julius Adebayo · Justin Gilmer · Michael Muelly · Ian Goodfellow · Moritz Hardt · Been Kim Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #30

### A Probabilistic U-Net for Segmentation of Ambiguous Images

Wed Dec 5th 10:35 – 10:40 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Simon Kohl· Bernardino Romera-Paredes· Clemens Meyer· Jeffrey De Fauw· Joseph R. Ledsam· Klaus Maier-Hein· S. M. Ali Eslami· Danilo Jimenez Rezende· Olaf Ronneberger Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #127

### Virtual Class Enhanced Discriminative Embedding Learning

Wed Dec 5th 10:40 – 10:45 AM @ Room 220 E Spotlight – In Wed Track 2 – Session 1 Binghui Chen · Weihong Deng · Haifeng Shen Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #130

### In Wed Track 3 – Session 1

Wed Dec 5th 09:45 – 09:50 AM @ Room 517 CD – Wed Dec 5th 10:40 – 10:45 AM @ Room 517 CD

Wed Dec 5th 09:45 – 09:50 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Sofiane Dhouib · Ievgen Redko Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #152

### Leveraged volume sampling for linear regression $% \left( 1\right) =\left( 1\right) \left( 1\right$

Wed Dec 5th 09:50 – 09:55 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Michal Derezinski · Manfred Warmuth · Daniel Hsu Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #151

# Synthesize Policies for Transfer and Adaptation across Tasks and Environments

Wed Dec 5th 09:55 – 10:00 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Hexiang Hu · Liyu Chen · Boqing Gong · Fei Sha Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #155

### Sublinear Time Low-Rank Approximation of Distance Matrices

Wed Dec 5th 10:00 – 10:05 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Ainesh Bakshi · David Woodruff Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #150

# Nearly tight sample complexity bounds for learning mixtures of Gaussians via sample compression schemes

Wed Dec 5th 10:05 – 10:20 AM @ Room 517 CD Oral – In Wed Track 3 – Session 1 Hassan Ashtiani · Shai Ben-David · Nick Harvey · Christopher Liaw · Abbas Mehrabian · Yaniv Plan Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #100

### Minimax Statistical Learning with Wasserstein distances

Wed Dec 5th 10:20 – 10:25 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Jaeho Lee  $\cdot$  Maxim Raginsky Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB

#### Generalization Bounds for Uniformly Stable Algorithms

Wed Dec 5th 10:25 – 10:30 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Vitaly Feldman  $\cdot$  Jan Vondrak Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #85

### A loss framework for calibrated anomaly detection

Wed Dec 5th 10:30 – 10:35 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Aditya Menon · Robert Williamson Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #110

#### Sharp Bounds for Generalized Uniformity Testing

Wed Dec 5th 10:35 – 10:40 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Ilias Diakonikolas · Daniel M. Kane · Alistair Stewart Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #92

### Convex Elicitation of Continuous Properties

Wed Dec 5th 10:40 – 10:45 AM @ Room 517 CD Spotlight – In Wed Track 3 – Session 1 Jessica Finocchiaro · Rafael Frongillo Poster Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #73

### In Wed Demonstrations

Wed Dec 5th 10:45 AM - 07:30 PM @ Room 510 ABCD  $\#\mathrm{D7}$  – Wed Dec 5th 10:45 AM – 07:30 PM @ Room 510 ABCD  $\#\mathrm{D6}$ 

### Multi-Word Imputation and Sentence Expansion

Wed Dec 5th 10:45 AM – 07:30 PM @ Room 510 ABCD #D7 Demonstration – In Wed Demonstrations Osman Ramadan  $\cdot$  Douglas Orr  $\cdot$  Dmitry Stratiychuk  $\cdot$  B?a?ej Czapp

## Automatic Curriculum Generation Applied to Teaching Novices a Short Bach Piano Segment

Wed Dec 5th 10:45 AM - 07:30 PM @ Room 510 ABCD #D10 Demonstration – In Wed Demonstrations Emma Brunskill  $\cdot$  Tong Mu  $\cdot$  Karan Goel  $\cdot$  Jonathan Bragg

### RieszNets: Accurate Real-Time 2D/3D Image Super-Resolution

Wed Dec 5th 10:45 AM - 07:30 PM @ Room 510 ABCD #D4 Demonstration - In Wed Demonstrations Saarthak Sachdeva  $\cdot$  Mohnish Chakravarti

# Autonomous robotic manipulation with a desktop research platform $% \left( 1\right) =\left( 1\right) +\left( 1\right) +\left$

Wed Dec 5th 10:45 AM – 07:30 PM @ Room 510 ABCD #D8 Demonstration – In Wed Demonstrations Jonathan Long  $\cdot$  Brandon Pereira  $\cdot$  Max Reynolds  $\cdot$  Rahul Rawat

### Play Imperfect Information Games against Neural Networks

Wed Dec 5th 10:45 AM - 07:30 PM @ Room 510 ABCD #D3 Demonstration – In Wed Demonstrations Andy C Kitchen  $\cdot$  Michela Benedetti  $\cdot$  Hon Weng Chong

 ${\tt PatentAI:}\ {\tt IP}\ {\tt Infringement}\ {\tt Detection}\ {\tt with}\ {\tt Enhanced}\ {\tt Paraphrase}\ {\tt Identification}$ 

Wed Dec 5th 10:45 AM - 07:30 PM @ Room 510 Demonstration – In Wed Demonstrations Youssef Drissi  $\cdot$  Karthikeyan Natesan Ramamurthy  $\cdot$  Prasanna Sattigeri

BigBlueBot: A Demonstration of How to Detect Egregious Conversations with Chatbots

Wed Dec 5th 10:45 AM - 07:30 PM @ Room 510 ABCD #D1 Demonstration – In Wed Demonstrations Casey Dugan  $\cdot$  Justin D Weisz  $\cdot$  Narendra Nath Joshi  $\cdot$  Ingrid Lange  $\cdot$  J Johnson  $\cdot$  Mohit Jain  $\cdot$  Werner Geyer

Perception, sensing, motion planning and robot control using AI for automated feeding of upper-extremity mobility impaired people

Wed Dec 5th 10:45 AM – 07:30 PM @ Room 510 ABCD #D2 Demonstration – In Wed Demonstrations Tapomayukh Bhattacharjee · Daniel Gallenberger · David Dubois · Siddhartha Srinivasa · Louis L'?cuyer-Lapierre

### A Cooperative Visually Grounded Dialogue Game with a Humanoid Robot

Wed Dec 5th 10:45 AM - 07:30 PM @ Room 510 ABCD #D9 Demonstration – In Wed Demonstrations Jordan Prince Tremblay  $\cdot$  Ismael Balafrej  $\cdot$  Felix Labelle  $\cdot$  F?lix Martel-Denis  $\cdot$  Eric Matte  $\cdot$  Julien Chouinard-Beaupr?  $\cdot$  Adam Letourneau  $\cdot$  Antoine Mercier-Nicol  $\cdot$  Simon Brodeur  $\cdot$  Fran?ois Ferland  $\cdot$  Jean ROUAT

Deep Reinforcement Learning for Online Order Dispatching and Driver Repositioning in Ride-sharing  $\,$ 

Wed Dec 5th 10:45 AM – 07:30 PM @ Room 510 ABCD #D6 Demonstration – In Wed Demonstrations Zhiwei Qin  $\cdot$  Xiaocheng Tang  $\cdot$  yan jiao  $\cdot$  Chenxi Wang

### In Wed Poster Session A

Balanced Policy Evaluation and Learning

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #1 Poster – In Wed Poster Session A Nathan Kallus

### Exponentiated Strongly Rayleigh Distributions

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #2 Poster – In Wed Poster Session A Zelda Mariet  $\cdot$  Suvrit Sra $\cdot$  Stefanie Jegelka

### Parsimonious Bayesian deep networks

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #3 Poster – In Wed Poster Session A Mingyuan Zhou

Stein Variational Gradient Descent as Moment Matching

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #4 Poster – In Wed Poster Session A Qiang Liu  $\cdot$  Dilin Wang

Hamiltonian Variational Auto-Encoder

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #5 Poster – In Wed Poster Session A Anthony L Caterini  $\cdot$  Arnaud Doucet  $\cdot$  Dino Sejdinovic

Predictive Approximate Bayesian Computation via Saddle Points

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #6 Poster – In Wed Poster Session A Yingxiang Yang  $\cdot$  Bo Dai  $\cdot$  Negar Kiyavash  $\cdot$  Niao He

Importance Weighting and Variational Inference

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #7 Poster – In Wed Poster Session A Justin Domke  $\cdot$  Daniel Sheldon

### Orthogonally Decoupled Variational Gaussian Processes

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #8 Poster – In Wed Poster Session A Hugh Salimbeni  $\cdot$  Ching-An Cheng  $\cdot$  Byron Boots  $\cdot$  Marc Deisenroth

## ATOMO: Communication-efficient Learning via Atomic Sparsification

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #9 Poster – In Wed Poster Session A Hongyi Wang  $\cdot$  Scott Sievert  $\cdot$  Shengchao Liu  $\cdot$  Zachary Charles  $\cdot$  Dimitris Papailiopoulos  $\cdot$  Stephen Wright

### Sparsified SGD with Memory

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #10 Poster – In Wed Poster Session A Sebastian Stich  $\cdot$  Jean-Baptiste Cordonnier  $\cdot$  Martin Jaggi

#### SEGA: Variance Reduction via Gradient Sketching

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #11 Poster - In Wed Poster Session A Filip Hanzely  $\cdot$  Konstantin Mishchenko  $\cdot$  Peter Richtarik

### Non-monotone Submodular Maximization in Exponentially Fewer Iterations

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #12 Poster – In Wed Poster Session A Eric Balkanski  $\cdot$  Adam Breuer  $\cdot$  Yaron Singer

# Stochastic Primal-Dual Method for Empirical Risk Minimization with O(1) Per-Iteration Complexity

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #13 Poster – In Wed Poster Session A Conghui Tan  $\cdot$  Tong Zhang  $\cdot$  Shiqian Ma $\cdot$  Ji Liu

## Rest-Katyusha: Exploiting the Solution's Structure via Scheduled Restart Schemes

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #14 Poster – In Wed Poster Session A Junqi Tang  $\cdot$  Mohammad Golbabaee  $\cdot$  Francis Bach  $\cdot$  Mike E davies

### Inexact trust-region algorithms on Riemannian manifolds

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #15 Poster – In Wed Poster Session A Hiroyuki Kasai  $\cdot$  Bamdev Mishra

### On Markov Chain Gradient Descent

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #16 Poster – In Wed Poster Session A Tao Sun · Yuejiao Sun · Wotao Yin

# Gradient Descent Meets Shift-and-Invert Preconditioning for Eigenvector Computation

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #17 Poster – In Wed Poster Session A Zhiqiang Xu

### ${\tt Global\ Non-convex\ Optimization\ with\ Discretized\ Diffusions}$

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #18 Poster – In Wed Poster Session A Murat A Erdogdu  $\cdot$  Lester Mackey  $\cdot$  Ohad Shamir

# $\ensuremath{\mathtt{A}}$ theory on the absence of spurious solutions for nonconvex and nonsmooth optimization

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #19 Poster – In Wed Poster Session A Cedric Josz · Yi Ouyang · Richard Zhang · Javad Lavaei · Somayeh Sojoudi

The Limit Points of (Optimistic) Gradient Descent in Min-Max Optimization

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #20 Poster – In Wed Poster Session A Constantinos Daskalakis  $\cdot$  Ioannis Panageas

 $\label{lem:porcupine Neural Networks: Approximating Neural Network \\ Landscapes$ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #21 Poster – In Wed Poster Session A Soheil Feizi  $\cdot$  Hamid Javadi  $\cdot$  Jesse Zhang  $\cdot$  David Tse

Adding One Neuron Can Eliminate All Bad Local Minima

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #22 Poster – In Wed Poster Session A SHIYU LIANG  $\cdot$  Ruoyu Sun  $\cdot$  Jason Lee  $\cdot$  R. Srikant

Improving Explorability in Variational Inference with Annealed Variational Objectives

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #23 Poster - In Wed Poster Session A Chin-Wei Huang  $\cdot$  Shawn Tan  $\cdot$  Alexandre Lacoste  $\cdot$  Aaron Courville

Sequential Attend, Infer, Repeat: Generative Modelling of Moving Objects  $\,$ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #24 Poster – In Wed Poster Session A Adam Kosiorek · Hyunjik Kim · Yee Whye Teh · Ingmar Posner

Delta-encoder: an effective sample synthesis method for few-shot object recognition

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #25 Poster - In Wed Poster Session A Eli Schwartz · Leonid Karlinsky · Joseph Shtok · Sivan Harary · Mattias Marder · Abhishek Kumar · Rogerio Feris · Raja Giryes · Alex Bronstein

Joint Active Feature Acquisition and Classification with Variable-Size Set Encoding

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #26 Poster – In Wed Poster Session A Hajin Shim  $\cdot$  Sung Ju Hwang  $\cdot$  Eunho Yang

PCA of high dimensional random walks with comparison to neural network training

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #27 Poster – In Wed Poster Session A Joseph Antognini  $\cdot$  Jascha Sohl-Dickstein

Insights on representational similarity in neural networks with canonical correlation

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #28 Poster – In Wed Poster Session A Ari Morcos  $\cdot$  Maithra Raghu  $\cdot$  Samy Bengio

Adversarial vulnerability for any classifier

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #29 Poster - In Wed Poster Session A Alhussein Fawzi  $\cdot$  Hamza Fawzi  $\cdot$  Omar Fawzi

Sanity Checks for Saliency Maps

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #30 Poster – In Wed Poster Session A Julius Adebayo  $\cdot$  Justin Gilmer  $\cdot$  Michael Muelly  $\cdot$  Ian Goodfellow  $\cdot$  Moritz Hardt  $\cdot$  Been Kim

MetaGAN: An Adversarial Approach to Few-Shot Learning

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #31 Poster – In Wed Poster Session A

Ruixiang ZHANG · Tong Che · Zoubin Ghahramani · Yoshua Bengio · Yangqiu Song

Deep Generative Models with Learnable Knowledge Constraints

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #32 Poster – In Wed Poster Session A

Zhiting Hu $\cdot$ Zichao Yang  $\cdot$ Ruslan Salakhutdinov  $\cdot$ LIANHUI Qin $\cdot$ Xiaodan Liang  $\cdot$ Haoye Dong  $\cdot$ Eric Xing

Learning Attractor Dynamics for Generative Memory

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #33 Poster – In Wed Poster Session A Yan Wu $\cdot$  Gregory Wayne  $\cdot$  Karol Gregor  $\cdot$  Timothy Lillicrap

Fast deep reinforcement learning using online adjustments from the past  $% \left( 1\right) =\left( 1\right) +\left( 1\right) +\left($ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #34 Poster – In Wed Poster Session A Steven Hansen  $\cdot$  Alexander Pritzel  $\cdot$  Pablo Sprechmann  $\cdot$  Andre Barreto  $\cdot$  Charles Blundell

Blockwise Parallel Decoding for Deep Autoregressive Models

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #35 Poster – In Wed Poster Session A Mitchell Stern  $\cdot$  Noam Shazeer  $\cdot$  Jakob Uszkoreit

Automatic Program Synthesis of Long Programs with a Learned Garbage Collector  $\,$ 

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #36 Poster – In Wed Poster Session A Amit Zohar  $\cdot$  Lior Wolf

The Global Anchor Method for Quantifying Linguistic Shifts and Domain Adaptation

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #37 Poster – In Wed Poster Session A Zi Yin · Vin Sachidananda · Balaji Prabhakar

 ${\tt End-to-End}\ {\tt Differentiable}\ {\tt Physics}\ {\tt for}\ {\tt Learning}\ {\tt and}\ {\tt Control}$ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #38 Poster – In Wed Poster Session A Filipe de Avila Belbute-Peres · Kevin Smith · Kelsey Allen · Josh Tenenbaum · J. Zico Kolter

Neural Arithmetic Logic Units

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #39 Poster – In Wed Poster Session A Andrew Trask  $\cdot$  Felix Hill  $\cdot$  Scott Reed  $\cdot$  Jack Rae  $\cdot$  Chris Dyer  $\cdot$  Phil Blunsom

Reinforced Continual Learning

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #40 Poster – In Wed Poster Session A Ju Xu  $\cdot$  Zhanxing Zhu

Poison Frogs! Targeted Clean-Label Poisoning Attacks on Neural Networks

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #41 Poster – In Wed Poster Session A Ali Shafahi · W. Ronny Huang · Mahyar Najibi · Octavian Suciu · Christoph Studer · Tudor Dumitras · Tom Goldstein

Generalizing to Unseen Domains via Adversarial Data Augmentation

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #42 Poster – In Wed Poster Session A Riccardo Volpi · Hongseok Namkoong · Ozan Sener · John Duchi · Vittorio Murino · Silvio Savarese

On the Local Hessian in Back-propagation

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #43 Poster – In Wed Poster Session A Huishuai Zhang  $\cdot$  Wei Chen  $\cdot$  Tie-Yan Liu

Lipschitz-Margin Training: Scalable Certification of Perturbation Invariance for Deep Neural Networks

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #44 Poster – In Wed Poster Session A

Yusuke Tsuzuku · Issei Sato · Masashi Sugiyama

Tangent: Automatic differentiation using source-code transformation for dynamically typed array programming

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #45 Poster – In Wed Poster Session A

Bart van Merrienboer - Dan Moldovan - Alexander Wiltschko

Simple, Distributed, and Accelerated Probabilistic Programming

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #46 Poster – In Wed Poster Session A

Dustin Tran · Matthew Hoffman · Dave Moore · Christopher Suter · Srinivas Vasudevan · Alexey Radul · Matthew Johnson · Rif A. Saurous

Power-law efficient neural codes provide general link between perceptual bias and discriminability

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #47 Poster – In Wed Poster Session A Michael Morais  $\cdot$  Jonathan W Pillow

DropBlock: A regularization method for convolutional networks

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #48 Poster – In Wed Poster Session A Golnaz Ghiasi  $\cdot$  Tsung-Yi Lin  $\cdot$  Quoc V Le

Learning sparse neural networks via sensitivity-driven regularization

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #49 Poster – In Wed Poster Session A

Enzo Tartaglione · Skjalg Leps?y · Attilio Fiandrotti · Gianluca Francini

Critical initialisation for deep signal propagation in noisy rectifier neural networks  $% \left( 1\right) =\left( 1\right) \left( 1\right) \left$ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #50 Poster – In Wed Poster Session A

Arnu Pretorius · Elan van Biljon · Steve Kroon · Herman Kamper

The streaming rollout of deep networks — towards fully model-parallel execution  $% \left( 1\right) =\left( 1\right) \left( 1\right) \left$ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #51 Poster – In Wed Poster Session A Volker Fischer  $\cdot$  Jan Koehler  $\cdot$  Thomas Pfeil

The Spectrum of the Fisher Information Matrix of a

Single-Hidden-Layer Neural Network  $\label{eq:hidden-Layer} Wed \ Dec \ 5th \ 10:45 \ AM - 12:45 \ PM \ @ \ Room \ 210 \ \& \ 230 \ AB$ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #52 Poster – In Wed Poster Session A Jeffrey Pennington  $\cdot$  Pratik Worah

Learning Optimal Reserve Price against Non-myopic Bidders

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #53 Poster – In Wed Poster Session A

Jinyan Liu  $\cdot$ Zhiyi Huang  $\cdot$  Xiangning Wang

Beyond Log-concavity: Provable Guarantees for Sampling Multi-modal Distributions using Simulated Tempering Langevin Monte Carlo

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #54 Poster – In Wed Poster Session A HOLDEN LEE  $\cdot$  Andrej Risteski  $\cdot$  Rong Ge

On Binary Classification in Extreme Regions

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #55 Poster – In Wed Poster Session A

Hamid JALALZAI · Stephan Cl?men?on · Anne Sabourin

 ${\tt PAC\textsc{-}Bayes}$  bounds for stable algorithms with instance-dependent priors

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #56 Poster – In Wed Poster Session A

Omar Rivasplata · Csaba Szepesvari · John Shawe-Taylor · Emilio Parrado-Hernandez · Shiliang Sun

 ${\tt Improved\ Algorithms\ for\ Collaborative\ PAC\ Learning}$ 

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #57 Poster – In Wed Poster Session A Huy Nguyen  $\cdot$  Lydia Zakynthinou

Data Amplification: A Unified and Competitive Approach to Property Estimation  $\,$ 

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #58 Poster – In Wed Poster Session A Yi HAO  $\cdot$  Alon Orlitsky  $\cdot$  Ananda Theertha Suresh  $\cdot$  Yihong Wu

Mean-field theory of graph neural networks in graph partitioning

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #59 Poster – In Wed Poster Session A Tatsuro Kawamoto  $\cdot$  Masashi Tsubaki  $\cdot$  Tomoyuki Obuchi

Statistical mechanics of low-rank tensor decomposition

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #60 Poster – In Wed Poster Session A Jonathan Kadmon  $\cdot$  Surya Ganguli

Plug-in Estimation in High-Dimensional Linear Inverse Problems: A Rigorous Analysis

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #61 Poster – In Wed Poster Session A

Alyson Fletcher · Parthe Pandit · Sundeep Rangan · Subrata Sarkar · Philip Schniter

The Description Length of Deep Learning models

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #62 Poster – In Wed Poster Session A L?onard Blier  $\cdot$  Yann Ollivier

Deepcode: Feedback Codes via Deep Learning

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #63 Poster – In Wed Poster Session A Hyeji Kim · Yihan Jiang · Sreeram Kannan · Sewoong Oh · Pramod Viswanath

Binary Rating Estimation with Graph Side Information

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #64 Poster – In Wed Poster Session A Kwangjun Ahn $\cdot$  Kangwook Lee $\cdot$  Hyunseung Cha $\cdot$  Changho Suh

Optimization of Smooth Functions with Noisy Observations: Local Minimax Rates

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #65 Poster – In Wed Poster Session A Yining Wang  $\cdot$  Sivaraman Balakrishnan  $\cdot$  Aarti Singh

Parameters as interacting particles: long time convergence and asymptotic error scaling of neural networks  $\,$ 

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #66 Poster – In Wed Poster Session A Grant Rotskoff  $\cdot$  Eric Vanden-Eijnden

# Towards Understanding Acceleration Tradeoff between Momentum and Asynchrony in Nonconvex Stochastic Optimization

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #67 Poster – In Wed Poster Session A

Tianyi Liu · Shiyang Li · Jianping Shi · Enlu Zhou · Tuo Zhao

#### Asymptotic optimality of adaptive importance sampling

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #68 Poster – In Wed Poster Session A Fran?ois Portier  $\cdot$  Bernard Delyon

# Inference Aided Reinforcement Learning for Incentive Mechanism Design in Crowdsourcing

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #69 Poster – In Wed Poster Session A

Zehong Hu $\cdot$  Yitao Li<br/>ang  $\cdot$  Jie Zhang  $\cdot$  Zhao Li $\cdot$  Yang Liu

# A Game-Theoretic Approach to Recommendation Systems with Strategic Content Providers $\,$

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #70 Poster – In Wed Poster Session A Omer Ben-Porat  $\cdot$  Moshe Tennenholtz

### A Mathematical Model For Optimal Decisions In A Representative Democracy

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #71 Poster – In Wed Poster Session A Malik Magdon-Ismail  $\cdot$  Lirong Xia

### Universal Growth in Production Economies

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #72 Poster – In Wed Poster Session A Simina Branzei · Ruta Mehta · Noam Nisan

### Convex Elicitation of Continuous Properties

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #73 Poster – In Wed Poster Session A Jessica Finocchiaro  $\cdot$  Rafael Frongillo

### Contextual Pricing for Lipschitz Buyers

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #74 Poster – In Wed Poster Session A Jieming Mao  $\cdot$  Renato Leme  $\cdot$  Jon Schneider

### Learning in Games with Lossy Feedback

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #75 Poster – In Wed Poster Session A Zhengyuan Zhou  $\cdot$  Panayotis Mertikopoulos  $\cdot$  Susan Athey  $\cdot$  Nicholas Bambos  $\cdot$  Peter W Glynn  $\cdot$  Yinyu Ye

# ${\tt Multiplicative\ Weights\ Updates\ with\ Constant\ Step-Size\ in\ Graphical\ Constant-Sum\ Games}$

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #76 Poster - In Wed Poster Session A Yun Kuen Cheung

### Solving Large Sequential Games with the Excessive Gap Technique

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #77 Poster - In Wed Poster Session A Christian Kroer  $\cdot$  Gabriele Farina  $\cdot$  Tuomas Sandholm

# Practical exact algorithm for trembling-hand equilibrium refinements in games $% \left( 1\right) =\left( 1\right) +\left( 1$

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #78 Poster – In Wed Poster Session A Gabriele Farina  $\cdot$  Nicola Gatti  $\cdot$  Tuomas Sandholm

Improving Online Algorithms via ML Predictions

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #79 Poster – In Wed Poster Session A Manish Purohit  $\cdot$  Zoya Svitkina  $\cdot$  Ravi Kumar

#### Variance-Reduced Stochastic Gradient Descent on Streaming Data

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #80 Poster – In Wed Poster Session A Ellango Jothimurugesan · Ashraf Tahmasbi · Phillip Gibbons ·

Srikanta Tirthapura

## Regret Bounds for Robust Adaptive Control of the Linear Quadratic Regulator

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #81 Poster – In Wed Poster Session A Sarah Dean  $\cdot$  Horia Mania  $\cdot$  Nikolai Matni  $\cdot$  Benjamin Recht  $\cdot$  Stephen Tu

#### PAC-learning in the presence of adversaries

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #82 Poster – In Wed Poster Session A Daniel Cullina · Arjun Nitin Bhagoji · Prateek Mittal

## Tight Bounds for Collaborative PAC Learning via Multiplicative Weights

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #83 Poster – In Wed Poster Session A Jiecao Chen $\cdot$  Qin Zhang  $\cdot$  Yuan Zhou

# Understanding Weight Normalized Deep Neural Networks with Rectified Linear Units

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #84 Poster – In Wed Poster Session A Yixi Xu · Xiao Wang

### Generalization Bounds for Uniformly Stable Algorithms

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #85 Poster – In Wed Poster Session A Vitaly Feldman  $\cdot$  Jan Vondrak

### Minimax Statistical Learning with Wasserstein distances

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #86 Poster – In Wed Poster Session A Jaeho Lee  $\cdot$  Maxim Raginsky

## Differentially Private Uniformly Most Powerful Tests for Binomial Data $\,$

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #87 Poster – In Wed Poster Session A Jordan Awan  $\cdot$  Aleksandra Slavkovi?

### Sketching Method for Large Scale Combinatorial Inference

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #88 Poster – In Wed Poster Session A Wei Sun  $\cdot$  Junwei Lu  $\cdot$  Han Liu

# An Improved Analysis of Alternating Minimization for Structured Multi-Response Regression

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #89 Poster – In Wed Poster Session A Sheng Chen  $\cdot$  Arindam Banerjee

# ${\tt MixLasso:}$ Generalized ${\tt Mixed}$ Regression via Convex Atomic-Norm Regularization

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #90 Poster – In Wed Poster Session A Ian En-Hsu Yen  $\cdot$  Wei-Cheng Lee  $\cdot$  Kai Zhong  $\cdot$  Sung-En Chang  $\cdot$  Pradeep Ravikumar  $\cdot$  Shou-De Lin

# A Theory-Based Evaluation of Nearest Neighbor Models Put Into Practice $\,$

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #91 Poster - In Wed Poster Session A Hendrik Fichtenberger  $\cdot$  Dennis Rohde

Sharp Bounds for Generalized Uniformity Testing

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #92Poster - In Wed Poster Session A

Ilias Diakonikolas · Daniel M. Kane · Alistair Stewart

Testing for Families of Distributions via the Fourier Transform

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #93 Poster - In Wed Poster Session A

Alistair Stewart · Ilias Diakonikolas · Clement Canonne

High Dimensional Linear Regression using Lattice Basis Reduction

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #94Poster – In Wed Poster Session A

Ilias Zadik · David Gamarnik

\$\ell\_1\$-regression with Heavy-tailed Distributions

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #95 Poster – In Wed Poster Session A

Lijun Zhang  $\cdot$  Zhi-Hua Zhou

Constant Regret, Generalized Mixability, and Mirror Descent

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #96 Poster - In Wed Poster Session A

Zakaria Mhammedi · Robert Williamson

Stochastic Composite Mirror Descent: Optimal Bounds with High Probabilities

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #97 Poster - In Wed Poster Session A

Yunwen Lei · Ke Tang

Uniform Convergence of Gradients for Non-Convex Learning and Optimization

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #98 Poster - In Wed Poster Session A

Dylan Foster  $\cdot$  Ayush Sekhari  $\cdot$  Karthik Sridharan

Fast Rates of ERM and Stochastic Approximation: Adaptive to Error Bound Conditions

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #99 Poster - In Wed Poster Session A

 Mingrui Liu · Xiaoxuan Zhang · Lijun Zhang · Jing Rong · Tianbao Yang

Nearly tight sample complexity bounds for learning mixtures of Gaussians via sample compression schemes

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #100 Poster – In Wed Poster Session A

 Hassan Ashtiani · Shai Ben-David · Nicholas Harvey · Christopher Liaw · Abbas Mehrabian · Yaniv Plan

Early Stopping for Nonparametric Testing

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #101Poster – In Wed Poster Session A

Meimei Liu · Guang Cheng

Chaining Mutual Information and Tightening Generalization Rounds

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #102Poster - In Wed Poster Session A

Amir Asadi  $\cdot$ Emmanuel Abbe  $\cdot$ Sergio Verdu

Dimensionality Reduction has Quantifiable Imperfections: Two Geometric Bounds

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #103 Poster - In Wed Poster Session A

Yik Chau (Kry) Lui · Gavin Weiguang Ding · Ruitong Huang · Robert McCann

Minimax Estimation of Neural Net Distance

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #104Poster – In Wed Poster Session A Kaiyi Ji $\cdot$  Yingbin Liang

Quantifying Learning Guarantees for Convex but Inconsistent Surrogates

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #105Poster – In Wed Poster Session A

Kirill Struminsky  $\cdot$  Simon Lacoste-Julien  $\cdot$  Anton Osokin

Learning Signed Determinantal Point Processes through the Principal Minor Assignment Problem

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #106 Poster – In Wed Poster Session A

Victor-Emmanuel Brunel

Data-dependent PAC-Bayes priors via differential privacy

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #107 Poster - In Wed Poster Session A

Gintare Karolina Dziugaite · Daniel Roy

Computationally and statistically efficient learning of causal Bayes nets using path queries

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #108 - In Wed Poster Session A

Kevin Bello · Jean Honorio

PAC-Bayes Tree: weighted subtrees with guarantees

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #109 Poster – In Wed Poster Session A

Tin D<br/> Nguyen  $\cdot$ Samory K<br/>potufe

A loss framework for calibrated anomaly detection

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #110Poster - In Wed Poster Session A

Aditya Menon · Robert Williamson

On Oracle-Efficient PAC RL with Rich Observations

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #111 Poster – In Wed Poster Session A

 Christoph Dann  $\cdot$  Nan Jiang  $\cdot$  Akshay Krishnamurthy  $\cdot$  Alekh Agarwal  $\cdot$  John Langford  $\cdot$  Robert Schapire

Adversarial Risk and Robustness: General Definitions and Implications for the Uniform Distribution

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #112Poster - In Wed Poster Session A

Dimitrios Diochnos  $\cdot$  Saeed Mahloujifar  $\cdot$  Mohammad Mahmoody

Learning from discriminative feature feedback

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #113Poster – In Wed Poster Session A

Sanjoy Dasgupta · Sivan Sabato · Nicholas Roberts · Akansha Dey

 $\ensuremath{\mathsf{How}}$  to Start Training: The Effect of Initialization and Architecture

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #114Poster – In Wed Poster Session A

Boris Hanin · David Rolnick

Bilevel Distance Metric Learning for Robust Image Recognition

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #115 Poster – In Wed Poster Session A

Jie Xu · Lei Luo · Cheng Deng · Heng Huang

#### Deep Non-Blind Deconvolution via Generalized Low-Rank Approximation

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #116

Poster – In Wed Poster Session A Wenqi Ren · Jiawei Zhang · Lin Ma · Jinshan Pan · Xiaochun Cao · Wangmeng Zuo · Wei Liu · Ming-Hsuan Yang

### Unsupervised Depth Estimation, 3D Face Rotation and Replacement

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #117 Poster - In Wed Poster Session A

 Joel Ruben Antony Moniz · Christopher Beckham · Simon Rajotte · Sina Honari · Chris Pal

### Neighbourhood Consensus Networks

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #118 Poster – In Wed Poster Session A

Ignacio Rocco · Mircea Cimpoi · Relja Arandjelovi? · Akihiko Torii · Tomas Pajdla · Josef Sivic

### Recurrent Transformer Networks for Semantic Correspondence

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #119Poster – In Wed Poster Session A

Seungryong Kim · Stephen Lin · SANG RYUL JEON · Dongbo Min · Kwanghoon Sohn

### Deep Network for the Integrated 3D Sensing of Multiple People in Natural Images

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #120Poster – In Wed Poster Session A

Andrei Zanfir · Elisabeta Marinoiu · Mihai Zanfir · Alin-Ionut Popa · Cristian Sminchisescu

### A Neural Compositional Paradigm for Image Captioning

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #121 Poster – In Wed Poster Session A

Bo<br/> Dai  $\cdot$ Sanja Fidler  $\cdot$ Dahua Lin

### Visual Memory for Robust Path Following

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #122 Poster – In Wed Poster Session A

Ashish Kumar · Saurabh Gupta · David Fouhey · Sergey Levine · Jitendra Malik

### Learning to Exploit Stability for 3D Scene Parsing

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #123Poster – In Wed Poster Session A

Yilun Du · Zhijian Liu · Hector Basevi · Ales Leonardis · Bill Freeman · Josh Tenenbaum · Jiajun Wu

### Learning to Decompose and Disentangle Representations for Video Prediction

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #124Poster – In Wed Poster Session A

 Jun-Ting Hsieh · Bingbin Liu · De-An Huang · Li Fei-Fei · Juan Carlos Niebles

### Weakly Supervised Dense Event Captioning in Videos

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #125 Poster - In Wed Poster Session A

 Xuguang Duan  $\cdot$  Wenbing Huang  $\cdot$  Chuang Gan  $\cdot$  Jingdong Wang  $\cdot$ Wenwu Zhu · Junzhou Huang

### Text-Adaptive Generative Adversarial Networks: Manipulating Images with Natural Language

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #126Poster - In Wed Poster Session A

Seonghyeon Nam · Yunji Kim · Seon Joo Kim

### A Probabilistic U-Net for Segmentation of Ambiguous Images

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #127Poster – In Wed Poster Session A

Simon Kohl · Bernardino Romera-Paredes · Clemens Meyer · Jeffrey De Fauw · Joseph R. Ledsam · Klaus Maier-Hein · S. M. Ali Eslami · Danilo Jimenez Rezende · Olaf Ronneberger

### Forward Modeling for Partial Observation Strategy Games - A StarCraft Defogger

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #128

Poster – In Wed Poster Session A
Gabriel Synnaeve · Zeming Lin · Jonas Gehring · Dan Gant · Vegard Mella · Vasil Khalidov · Nicolas Carion · Nicolas Usunier

### Adversarial Text Generation via Feature-Mover's Distance

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #129 Poster – In Wed Poster Session A

 Liqu<br/>n Chen $\cdot$ Shuyang Dai $\cdot$ Chenyang Ta<br/>o $\cdot$ Haichao Zhang  $\cdot$ Zhe Gan · Dinghan Shen · Yizhe Zhang · Guoyin Wang · Ruiyi Zhang · Lawrence Carin

### Virtual Class Enhanced Discriminative Embedding Learning

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #130Poster – In Wed Poster Session A

Binghui Chen  $\cdot$  Weihong Deng  $\cdot$  Haifeng Shen

### Learning Pipelines with Limited Data and Domain Knowledge: A Study in Parsing Physics Problems

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #131

 Poster – In Wed Poster Session A Mrinmaya Sachan · Kumar Avinava Dubey · Tom Mitchell · Dan Roth · Eric Xing

### Pipe-SGD: A Decentralized Pipelined SGD Framework for Distributed Deep Net Training

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #132 Poster – In Wed Poster Session A Youjie Li · Mingchao Yu · Songze Li · Salman Avestimehr · Nam

Sung Kim · Alexander Schwing

#### MULAN: A Blind and Off-Grid Method for Multichannel Echo Retrieval

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #133 Poster - In Wed Poster Session A

Helena Peic Tukuljac · Antoine Deleforge · Remi Gribonval

### Diminishing Returns Shape Constraints for Interpretability and Regularization

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #134Poster – In Wed Poster Session A

### Fairness Through Computationally-Bounded Awareness

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #135Poster - In Wed Poster Session A

Michael Kim  $\cdot$  Omer Reingold  $\cdot$  Guy Rothblum

### On preserving non-discrimination when combining expert advice

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #136Poster - In Wed Poster Session A

Avrim Blum · Suriya Gunasekar · Thodoris Lykouris · Nati Srebro

### Fairness Behind a Veil of Ignorance: A Welfare Analysis for Automated Decision Making

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #137

Poster – In Wed Poster Session A Hoda Heidari · Claudio Ferrari · Krishna Gummadi · Andreas Krause

Inequity aversion improves cooperation in intertemporal social dilemmas

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #138 Poster – In Wed Poster Session A

Edward Hughes · Joel Leibo · Matthew Phillips · Karl Tuyls · Edgar Due?ez-Guzman · Antonio Garc?a Casta?eda · Iain Dunning · Tina Zhu · Kevin McKee · Raphael Koster · Heather Roff · Thore Graepel

### On Misinformation Containment in Online Social Networks

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #139 Poster – In Wed Poster Session A Amo Tong  $\cdot$  Ding-Zhu Du  $\cdot$  Weili Wu

### Found Graph Data and Planted Vertex Covers

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #140 Poster – In Wed Poster Session A Austin Benson  $\cdot$  Jon Kleinberg

### Inferring Networks From Random Walk-Based Node Similarities

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #141 Poster – In Wed Poster Session A

Jeremy Hoskins · Cameron Musco · Christopher Musco · Babis Tsourakakis

## Fast Greedy MAP Inference for Determinantal Point Process to Improve Recommendation Diversity

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #142 Poster – In Wed Poster Session A Laming Chen  $\cdot$  Guoxin Zhang  $\cdot$  Eric Zhou

#### Unorganized Malicious Attacks Detection

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #143 Poster – In Wed Poster Session A Ming Pang  $\cdot$  Wei Gao  $\cdot$  Min Tao  $\cdot$  Zhi-Hua Zhou

### Scalable Robust Matrix Factorization with Nonconvex Loss

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #144 Poster – In Wed Poster Session A Quanming Yao  $\cdot$  James Kwok

### Differentially Private Robust Low-Rank Approximation

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #145 Poster – In Wed Poster Session A Raman Arora  $\cdot$  Vladimir braverman  $\cdot$  Jalaj Upadhyay

### Differential Privacy for Growing Databases

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #146 Poster – In Wed Poster Session A Rachel Cummings  $\cdot$  Sara Krehbiel  $\cdot$  Kevin A Lai  $\cdot$  Uthaipon Tantipongpipat

# Efficient Neural Network Robustness Certification with General Activation Functions

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #147 Poster – In Wed Poster Session A Huan Zhang · Tsui-Wei Weng · Pin-Yu Chen · Cho-Jui Hsieh · Luca

### Spectral Signatures in Backdoor Attacks

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #148 Poster – In Wed Poster Session A Brandon Tran  $\cdot$  Jerry Li  $\cdot$  Aleksander Madry

## Constructing Unrestricted Adversarial Examples with Generative Models

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #149 Poster – In Wed Poster Session A Yang Song  $\cdot$  Rui Shu $\cdot$  Nate Kushman  $\cdot$  Stefano Ermon

### Sublinear Time Low-Rank Approximation of Distance Matrices

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #150 Poster – In Wed Poster Session A Ainesh Bakshi  $\cdot$  David Woodruff

### Leveraged volume sampling for linear regression

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #151 Poster – In Wed Poster Session A Michal Derezinski  $\cdot$  Manfred Warmuth  $\cdot$  Daniel Hsu

### 

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #152 Poster – In Wed Poster Session A Sofiane Dhouib  $\cdot$  Ievgen Redko

# Differential Properties of Sinkhorn Approximation for Learning with Wasserstein Distance

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #153 Poster – In Wed Poster Session A Giulia Luise · Alessandro Rudi · Massimiliano Pontil · Carlo Ciliberto

### Algorithms and Theory for Multiple-Source Adaptation

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #154 Poster – In Wed Poster Session A Judy Hoffman  $\cdot$  Mehryar Mohri $\cdot$  Ningshan Zhang

### Synthesize Policies for Transfer and Adaptation across Tasks and Environments

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #155 Poster – In Wed Poster Session A Hexiang Hu  $\cdot$  Liyu Chen  $\cdot$  Boqing Gong  $\cdot$  Fei Sha

### Acceleration through Optimistic No-Regret Dynamics

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #156 Poster – In Wed Poster Session A Jun-Kun Wang  $\cdot$  Jacob Abernethy

### Efficient Online Portfolio with Logarithmic Regret

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #157 Poster – In Wed Poster Session A Haipeng Luo  $\cdot$  Chen-Yu Wei  $\cdot$  Kai Zheng

# Almost Optimal Algorithms for Linear Stochastic Bandits with Heavy-Tailed Payoffs

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #158 Poster – In Wed Poster Session A Han Shao  $\cdot$  Xiaotian Yu $\cdot$  Irwin King  $\cdot$  Michael Lyu

# A Smoothed Analysis of the Greedy Algorithm for the Linear Contextual Bandit Problem

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #159 Poster – In Wed Poster Session A Sampath Kannan  $\cdot$  Jamie Morgenstern  $\cdot$  Aaron Roth  $\cdot$  Bo Waggoner  $\cdot$  Zhiwei Steven Wu

### Exploration in Structured Reinforcement Learning

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #160 Poster – In Wed Poster Session A Jungseul Ok  $\cdot$  Alexandre Proutiere  $\cdot$  Damianos Tranos

## Near Optimal Exploration-Exploitation in Non-Communicating Markov Decision Processes

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #161 Poster – In Wed Poster Session A Ronan Fruit  $\cdot$  Matteo Pirotta  $\cdot$  Alessandro Lazaric

# A Block Coordinate Ascent Algorithm for Mean-Variance Optimization

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #162 Poster – In Wed Poster Session A

Tengyang Xie · Bo Liu · Yangyang Xu · Mohammad Ghavamzadeh - Yinlam Chow - Daoming Lyu - Daesub Yoon

### Learning Safe Policies with Expert Guidance

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #163 Poster – In Wed Poster Session A

Jessie Huang · Fa Wu · Doina Precup · Yang Cai

M-Walk: Learning to Walk over Graphs using Monte Carlo Tree

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #164 Poster - In Wed Poster Session A

Yelong Shen  $\cdot$  Jianshu Chen  $\cdot$  Po-Sen Huang  $\cdot$  Yuqing Guo  $\cdot$  Jianfeng

### Is Q-Learning Provably Efficient?

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #165 Poster - In Wed Poster Session A

Chi Jin · Zeyuan Allen-Zhu · Sebastien Bubeck · Michael Jordan

Variational Inverse Control with Events: A General Framework for Data-Driven Reward Definition

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #166 Poster – In Wed Poster Session A

Justin Fu · Avi Singh · Dibya Ghosh · Larry Yang · Sergey Levine

An Off-policy Policy Gradient Theorem Using Emphatic Weightings

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #167 Poster – In Wed Poster Session A

Ehsan Imani · Eric Graves · Martha White

Near-Optimal Time and Sample Complexities for Solving Markov Decision Processes with a Generative Model

Wed Dec 5th 10:45 AM - 12:45 PM @ Room 210 & 230 AB #168 Poster – In Wed Poster Session A

Aaron Sidford - Mengdi Wang - Xian Wu<br/> - Lin Yang - Yinyu Ye

 ${\tt Monte-Carlo\ Tree\ Search\ for\ Constrained\ POMDPs}$ 

Wed Dec 5th 10:45 AM – 12:45 PM @ Room 210 & 230 AB #169 Poster - In Wed Poster Session A

Jongmin Lee  $\cdot$  Geon-hyeong Kim  $\cdot$  Pascal Poupart  $\cdot$  Kee-Eung Kim

Investigations into the Human-AI Trust Phenomenon

Wed Dec 5th 02:15 – 03:05 PM @ Rooms 220 CDE Invited Talk – In Wed Invited Talk 2 Avanna Howard

Coffee Break

Wed Dec 5th 03:05-03:30 PM @

### In Wed Track 1 – Session 2

Wed Dec 5th 03:30 - 03:35 PM @ Room 220 CD - Wed Dec 5th 04:55 - 05:00 PM @ Room 220 CD

Breaking the Curse of Horizon: Infinite-Horizon Off-Policy

Wed Dec 5th 03:30-03:35 PM @ Room 220 CD  $Spotlight-In\ Wed\ Track\ 1-Session\ 2$ Qiang Liu · Lihong Li · Ziyang Tang · Dengyong Zhou Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #121

Graph Convolutional Policy Network for Goal-Directed Molecular Graph Generation

Wed Dec 5th 03:35-03:40 PM @ Room 220 CD

Spotlight – In Wed Track 1 – Session 2 Jiaxuan You · Bowen Liu · Zhitao Ying · Vijay Pande · Jure Leskovec Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #140

 ${\tt Memory\ Augmented\ Policy\ Optimization\ for\ Program\ Synthesis\ and}$ Semantic Parsing

Wed Dec 5th 03:40 - 03:45 PM @ Room 220 CD

Spotlight – In Wed Track 1 – Session 2

Chen Liang · Mohammad Norouzi · Jonathan Berant · Quoc V Le ·

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #137

#### Meta-Reinforcement Learning of Structured Exploration Strategies

Wed Dec 5th 03:45 – 03:50 PM @ Room 220 CD

 $Spotlight-In\ Wed\ Track\ 1-Session\ 2$ Abhishek Gupta · Russell Mendonca · YuXuan Liu · Pieter Abbeel · Sergey Levine

Poster Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #134

### Policy Optimization via Importance Sampling

Wed Dec 5th 03:50 - 04:05 PM @ Room 220 CD

Oral - In Wed Track 1 - Session 2

Alberto Maria Metelli · Matteo Papini · Francesco Faccio · Marcello

Restelli

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #109

#### A Bayesian Approach to Generative Adversarial Imitation Learning

Wed Dec 5th 04:05 – 04:10 PM @ Room 220 CD Spotlight – In Wed Track 1 – Session 2

Wonseok Jeon · Seokin Seo · Kee-Eung Kim

Poster Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #129

### Visual Reinforcement Learning with Imagined Goals

Wed Dec 5th 04:10 - 04:15 PM @ Room 220 CD

Spotlight - In Wed Track 1 - Session 2

Ashvin Nair · Vitchyr Pong · Murtaza Dalal · Shikhar Bahl · Steven

Lin · Sergey Levine

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #141

### Randomized Prior Functions for Deep Reinforcement Learning

Wed Dec 5th 04:15-04:20 PM @ Room 220 CD

 $Spotlight-In\ Wed\ Track\ 1-Session\ 2$ 

Ian Osband · John Aslanides · Albin Cassirer

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #154

### Playing hard exploration games by watching YouTube

Wed Dec 5th 04:20-04:25 PM @ Room 220 CD

Yusuf Aytar · Tobias Pfaff · David Budden · Thomas Paine · Ziyu

Wang · Nando de Freitas

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #142

### Recurrent World Models Facilitate Policy Evolution

Wed Dec 5th 04:25 – 04:40 PM @ Room 220 CD

Oral – In Wed Track 1 – Session 2

David Ha $\cdot$ J?rgen Schmidhuber

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #65

### Reducing Network Agnostophobia

Wed Dec 5th 04:40 – 04:45 PM @ Room 220 CD

Spotlight - In Wed Track 1 - Session 2

Akshay Raj Dhamija · Manuel G?nther · Terrance Boult

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #100

Life-Long Disentangled Representation Learning with Cross-Domain Latent Homologies

Wed Dec 5th 04:45 – 04:50 PM @ Room 220 CD Spotlight – In Wed Track 1 – Session 2 Alessandro Achille · Tom Eccles · Loic Matthey · Chris Burgess · Nicholas Watters · Alexander Lerchner · Irina Higgins Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #101

### Geometrically Coupled Monte Carlo Sampling

Wed Dec 5th 04:50 – 04:55 PM @ Room 220 CD Spotlight – In Wed Track 1 – Session 2 Mark Rowland · Krzysztof Choromanski · Fran?ois Chalus · Aldo Pacchiano · Tamas Sarlos · Richard E Turner · Adrian Weller Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #97

#### Scalable Laplacian K-modes

Wed Dec 5th 04:55 – 05:00 PM @ Room 220 CD Spotlight – In Wed Track 1 – Session 2 Imtiaz Ziko · Eric Granger · Ismail Ben Ayed Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #96

### In Wed Track 2 – Session 2

Wed Dec 5th 03:30 - 03:35 PM @ Room 220 E - Wed Dec 5th 04:55 - 05:00 PM @ Room 220 E

#### Dynamic Network Model from Partial Observations

Wed Dec 5th 03:30 – 03:35 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Elahe Ghalebi · Baharan Mirzasoleiman · Radu Grosu · Jure Leskovec Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #7

### Stochastic Nonparametric Event-Tensor Decomposition

Wed Dec 5th 03:35 – 03:40 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Shandian Zhe  $\cdot$  Yishuai Du Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #12

### On GANs and GMMs

Wed Dec 5th 03:40 – 03:45 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Eitan Richardson  $\cdot$  Yair Weiss Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #59

### GILBO: One Metric to Measure Them All

Wed Dec 5th 03:45 – 03:50 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Alexander Alemi · Ian Fischer Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #57

## Isolating Sources of Disentanglement in Variational Autoencoders $\,$

Wed Dec 5th 03:50 – 04:05 PM @ Room 220 E Oral – In Wed Track 2 – Session 2 Tian Qi Chen · Xuechen Li · Roger Grosse · David Duvenaud Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #58

## Sparse Covariance Modeling in High Dimensions with Gaussian

Wed Dec 5th 04:05 – 04:10 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Rui Li · Kishan KC · Feng Cui · Justin Domke · Anne Haake Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #18

# Efficient High Dimensional Bayesian Optimization with Additivity and Quadrature Fourier Features

Wed Dec 5th 04:10 – 04:15 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Mojmir Mutny  $\cdot$  Andreas Krause Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #23

# Regret bounds for meta Bayesian optimization with an unknown Gaussian process prior $% \left( 1\right) =\left( 1\right) +\left( 1\right)$

Wed Dec 5th 04:15 – 04:20 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Zi Wang · Beomjoon Kim · Leslie Kaelbling Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #22

### Adversarially Robust Optimization with Gaussian Processes

Wed Dec 5th 04:20 – 04:25 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Ilija Bogunovic · Jonathan Scarlett · Stefanie Jegelka · Volkan Cevher Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #24

# Approximate Knowledge Compilation by Online Collapsed Importance Sampling

Wed Dec 5th 04:25 – 04:40 PM @ Room 220 E Oral – In Wed Track 2 – Session 2 Tal Friedman  $\cdot$  Guy Van den Broeck Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #5

## DAGs with NO TEARS: Continuous Optimization for Structure Learning

Wed Dec 5th 04:40 – 04:45 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Xun Zheng  $\cdot$  Bryon Aragam  $\cdot$  Pradeep Ravikumar  $\cdot$  Eric Xing Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #9

### Proximal Graphical Event Models

Wed Dec 5th 04:45 – 04:50 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Debarun Bhattacharjya · Dharmashankar Subramanian · Tian Gao Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #6

### Heterogeneous Multi-output Gaussian Process Prediction

Wed Dec 5th 04:50 – 04:55 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Pablo Moreno-Mu?oz · Antonio Art?s · Mauricio ?lvarez Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #14

# GPyTorch: Blackbox Matrix-Matrix Gaussian Process Inference with GPU Acceleration

Wed Dec 5th 04:55 – 05:00 PM @ Room 220 E Spotlight – In Wed Track 2 – Session 2 Jacob Gardner  $\cdot$  Geoff Pleiss  $\cdot$  Kilian Weinberger  $\cdot$  David Bindel  $\cdot$  Andrew Wilson Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #13

### In Wed Track 3 – Session 2

Wed Dec 5th 03:30 – 03:35 PM @ Room 517 CD – Wed Dec 5th 04:55 – 05:00 PM @ Room 517 CD

The Nearest Neighbor Information Estimator is Adaptively Near Minimax Rate-Optimal

Wed Dec 5th 03:30 – 03:35 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Jiantao Jiao · Weihao Gao · Yanjun Han Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #86

### Contextual Stochastic Block Models

Wed Dec 5th 03:35 – 03:40 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Yash Deshpande · Subhabrata Sen · Andrea Montanari · Elchanan Mossel Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #79

# Entropy Rate Estimation for Markov Chains with Large State $\ensuremath{\mathsf{Space}}$

Wed Dec 5th 03:40 – 03:45 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Yanjun Han · Jiantao Jiao · Chuan-Zheng Lee · Tsachy Weissman · Yihong Wu · Tiancheng Yu Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #82

### Blind Deconvolutional Phase Retrieval via Convex Programming

Wed Dec 5th 03:45 – 03:50 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Ali Ahmed · Alireza Aghasi · Paul Hand Beeter Wed Dec 5th 05:00 · 07:00 PM @ Room 33

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #81

Stochastic Cubic Regularization for Fast Nonconvex Optimization

Wed Dec 5th 03:50 – 04:05 PM @ Room 517 CD Oral – In Wed Track 3 – Session 2 Nilesh Tripuraneni · Mitchell Stern · Chi Jin · Jeffrey Regier · Michael Jordan

Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #42

Stochastic Nested Variance Reduced Gradient Descent for Nonconvex Optimization

Wed Dec 5th 04:05 – 04:10 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Dongruo Zhou · Pan Xu · Quanquan Gu Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #44

On the Local Minima of the Empirical Risk

Wed Dec 5th 04:10 – 04:15 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Chi Jin · Lydia T. Liu · Rong Ge · Michael Jordan Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #43

How Much Restricted Isometry is Needed In Nonconvex Matrix Recovery?

Wed Dec 5th 04:15 – 04:20 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Richard Zhang · Cedric Josz · Somayeh Sojoudi · Javad Lavaei Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #46

SPIDER: Near-Optimal Non-Convex Optimization via Stochastic Path-Integrated Differential Estimator

Wed Dec 5th 04:20 – 04:25 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Cong Fang  $\cdot$  Chris Junchi Li  $\cdot$  Zhouchen Lin  $\cdot$  Tong Zhang Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #49

Analysis of Krylov Subspace Solutions of Regularized Non-Convex Quadratic Problems

Wed Dec 5th 04:25 – 04:40 PM @ Room 517 CD Oral – In Wed Track 3 – Session 2 Yair Carmon  $\cdot$  John Duchi Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #48

 ${\tt Natasha~2:~Faster~Non-Convex~Optimization~Than~SGD}$ 

Wed Dec 5th 04:40 – 04:45 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Zeyuan Allen-Zhu Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #50

Escaping Saddle Points in Constrained Optimization

Wed Dec 5th 04:45 – 04:50 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Aryan Mokhtari · Asuman Ozdaglar · Ali Jadbabaie Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #47

On Coresets for Logistic Regression  $\,$ 

Wed Dec 5th 04:50 – 04:55 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Alexander Munteanu · Chris Schwiegelshohn · Christian Sohler · David Woodruff Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #77

Legendre Decomposition for Tensors

Wed Dec 5th 04:55 – 05:00 PM @ Room 517 CD Spotlight – In Wed Track 3 – Session 2 Mahito Sugiyama · Hiroyuki Nakahara · Koji Tsuda Poster Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #92

### In Wed Poster Session B

Equality of Opportunity in Classification: A Causal Approach

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #1 Poster – In Wed Poster Session B Junzhe Zhang  $\cdot$  Elias Bareinboim

Confounding-Robust Policy Improvement

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #2 Poster – In Wed Poster Session B Nathan Kallus  $\cdot$  Angela Zhou

Causal Discovery from Discrete Data using Hidden Compact Representation

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #3 Poster – In Wed Poster Session B Ruichu Cai · Jie Qiao · Kun Zhang · Zhenjie Zhang · Zhifeng Hao

Dirichlet belief networks for topic structure learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #4 Poster – In Wed Poster Session B He Zhao  $\cdot$  Lan Du  $\cdot$  Wray Buntine  $\cdot$  Mingyuan Zhou

Approximate Knowledge Compilation by Online Collapsed Importance Sampling

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #5 Poster – In Wed Poster Session B Tal Friedman  $\cdot$  Guy Van den Broeck

Proximal Graphical Event Models

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #6 Poster – In Wed Poster Session B Debarun Bhattacharjya  $\cdot$  Dharmashankar Subramanian  $\cdot$  Tian Gao

Dynamic Network Model from Partial Observations

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #7 Poster – In Wed Poster Session B Elahe Ghalebi · Baharan Mirzasoleiman · Radu Grosu · Jure Leskovec

HOGWILD!-Gibbs can be PanAccurate

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #8 Poster – In Wed Poster Session B Constantinos Daskalakis · Nishanth Dikkala · Siddhartha Jayanti

 ${\tt DAGs}$  with NO TEARS: Continuous Optimization for Structure Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #9 Poster – In Wed Poster Session B Xun Zheng  $\cdot$  Bryon Aragam  $\cdot$  Pradeep Ravikumar  $\cdot$  Eric Xing

Mean Field for the Stochastic Blockmodel: Optimization Landscape and Convergence Issues

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #10 Poster – In Wed Poster Session B Soumendu Sundar Mukherjee · Purnamrita Sarkar · Y. X. Rachel Wang · Bowei Yan

Coupled Variational Bayes via Optimization Embedding

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #11 Poster – In Wed Poster Session B Bo Dai  $\cdot$  Hanjun Dai  $\cdot$  Niao He $\cdot$  Weiyang Liu  $\cdot$  Zhen Liu  $\cdot$  Jianshu Chen  $\cdot$  Lin Xiao  $\cdot$  Le Song

Stochastic Nonparametric Event-Tensor Decomposition

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #12 Poster – In Wed Poster Session B Shandian Zhe  $\cdot$  Yishuai Du

### GPyTorch: Blackbox Matrix-Matrix Gaussian Process Inference with GPU Acceleration

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #13 Poster - In Wed Poster Session B Jacob Gardner - Geoff Pleiss - Kilian Weinberger - David Bindel -

Andrew Wilson

#### Heterogeneous Multi-output Gaussian Process Prediction

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #14 Poster – In Wed Poster Session B Pablo Moreno-Mu?oz · Antonio Art?s · Mauricio ?lvarez

#### Probabilistic Matrix Factorization for Automated Machine Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #15 Poster – In Wed Poster Session B Nicolo Fusi · Rishit Sheth · Melih Elibol

### Stochastic Expectation Maximization with Variance Reduction

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #16 Poster - In Wed Poster Session B Jianfei Chen · Jun Zhu · Yee Whye Teh · Tong Zhang

#### Generative Neural Machine Translation

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #17 Poster – In Wed Poster Session B Harshil Shah · David Barber

### Sparse Covariance Modeling in High Dimensions with Gaussian

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #18 Poster – In Wed Poster Session B Rui Li $\cdot$ Kishan K<br/>C $\cdot$ Feng Cui $\cdot$ Justin Domke  $\cdot$ Anne Haake

### Variational Learning on Aggregate Outputs with Gaussian

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #19 Poster – In Wed Poster Session B Ho Chung Law · Dino Sejdinovic · Ewan Cameron · Tim Lucas · Seth Flaxman · Katherine Battle · Kenji Fukumizu

### Learning Invariances using the Marginal Likelihood

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #20 Poster - In Wed Poster Session B Mark van der Wilk · Matthias Bauer · ST John · James Hensman

### Dirichlet-based Gaussian Processes for Large-scale Calibrated Classification

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #21 Poster – In Wed Poster Session B Dimitrios Milios · Raffaello Camoriano · Pietro Michiardi · Lorenzo Rosasco · Maurizio Filippone

### Regret bounds for meta Bayesian optimization with an unknown Gaussian process prior

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #22 Poster – In Wed Poster Session B Zi Wang  $\cdot$  Beomjoon Kim  $\cdot$  Leslie Kaelbling

### ${\tt Efficient\ High\ Dimensional\ Bayesian\ Optimization\ with}$ Additivity and Quadrature Fourier Features

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #23 Poster – In Wed Poster Session B Mojmir Mutny · Andreas Krause

### Adversarially Robust Optimization with Gaussian Processes

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #24Poster – In Wed Poster Session B Ilija Bogunovic - Jonathan Scarlett - Stefanie Jegelka - Volkan Cevher

### Multi-objective Maximization of Monotone Submodular Functions with Cardinality Constraint

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #25 Poster – In Wed Poster Session B Rajan Udwani

#### Variational PDEs for Acceleration on Manifolds and Application to Diffeomorphisms

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #26 Poster – In Wed Poster Session B Ganesh Sundaramoorthi · Anthony Yezzi

#### Zeroth-order (Non)-Convex Stochastic Optimization via Conditional Gradient and Gradient Updates

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #27 Poster – In Wed Poster Session B Krishnakumar Balasubramanian  $\cdot$  Saeed Ghadimi

#### Computing Higher Order Derivatives of Matrix and Tensor Expressions

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #28Poster – In Wed Poster Session B Soeren Laue · Matthias Mitterreiter · Joachim Giesen

### How SGD Selects the Global Minima in Over-parameterized Learning: A Dynamical Stability Perspective

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #29 Poster – In Wed Poster Session B Lei Wu $\cdot$ Chao Ma $\cdot$ Weinan E

#### The Effect of Network Width on the Performance of Large-batch Training

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #30Poster – In Wed Poster Session B Lingjiao Chen · Hongyi Wang · Jinman Zhao · Dimitris Papailiopoulos · Paraschos Koutris

### COLA: Decentralized Linear Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #31 Poster – In Wed Poster Session B Lie He $\cdot$  An Bian  $\cdot$  Martin Jaggi

### Distributed Stochastic Optimization via Adaptive SGD

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #32 Poster - In Wed Poster Session B Ashok Cutkosky · R?bert Busa-Fekete

# Non-Ergodic Alternating Proximal Augmented Lagrangian Algorithms with Optimal Rates $\,$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #33 Poster – In Wed Poster Session B Quoc Tran Dinh

#### Breaking the Span Assumption Yields Fast Finite-Sum Minimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #34 Poster – In Wed Poster Session B Robert Hannah · Yanli Liu · Daniel O'Connor · Wotao Yin

### Optimization for Approximate Submodularity

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #35 Poster – In Wed Poster Session B Yaron Singer · Avinatan Hassidim

#### Submodular Maximization via Gradient Ascent: The Case of Deep Submodular Functions

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #36 Poster – In Wed Poster Session B Wenruo Bai · William Stafford Noble · Jeff Bilmes

### Maximizing Induced Cardinality Under a Determinantal Point Process

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #37 Poster – In Wed Poster Session B

Jennifer Gillenwater - Alex Kulesza - Sergei Vassilvitskii - Zelda Mariet

## Efficient Algorithms for Non-convex Isotonic Regression through Submodular Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #38 Poster – In Wed Poster Session B Francis Bach

## Revisiting Decomposable Submodular Function Minimization with Incidence Relations

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #39 Poster – In Wed Poster Session B Pan Li  $\cdot$  Olgica Milenkovic

#### Coordinate Descent with Bandit Sampling

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #40 Poster – In Wed Poster Session B Farnood Salehi  $\cdot$  Patrick Thiran  $\cdot$  Elisa Celis

## Accelerated Stochastic Matrix Inversion: General Theory and Speeding up BFGS Rules for Faster Second-Order Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #41 Poster – In Wed Poster Session B Robert Gower  $\cdot$  Filip Hanzely  $\cdot$  Peter Richtarik  $\cdot$  Sebastian Stich

### Stochastic Cubic Regularization for Fast Nonconvex Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #42 Poster – In Wed Poster Session B Nilesh Tripuraneni · Mitchell Stern · Chi Jin · Jeffrey Regier Michael Jordan

### On the Local Minima of the Empirical Risk

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #43 Poster – In Wed Poster Session B Chi Jin  $\cdot$  Lydia T. Liu  $\cdot$  Rong Ge  $\cdot$  Michael Jordan

# Stochastic Nested Variance Reduced Gradient Descent for Nonconvex Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #44 Poster – In Wed Poster Session B Dongruo Zhou · Pan Xu · Quanquan Gu

### NEON2: Finding Local Minima via First-Order Oracles

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #45 Poster – In Wed Poster Session B Zeyuan Allen-Zhu · Yuanzhi Li

# How Much Restricted Isometry is Needed In Nonconvex Matrix Recovery?

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #46 Poster – In Wed Poster Session B Richard Zhang  $\cdot$  Cedric Josz  $\cdot$  Somayeh Sojoudi  $\cdot$  Javad Lavaei

### Escaping Saddle Points in Constrained Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #47 Poster – In Wed Poster Session B Aryan Mokhtari  $\cdot$  Asuman Ozdaglar  $\cdot$  Ali Jadbabaie

# Analysis of Krylov Subspace Solutions of Regularized Non-Convex Quadratic Problems

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #48 Poster – In Wed Poster Session B Yair Carmon  $\cdot$  John Duchi

# ${\tt SPIDER: Near-Optimal\ Non-Convex\ Optimization\ via\ Stochastic\ Path-Integrated\ Differential\ Estimator}$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #49 Poster – In Wed Poster Session B Cong Fang  $\cdot$  Chris Junchi Li $\cdot$  Zhouchen Lin $\cdot$  Tong Zhang

### Natasha 2: Faster Non-Convex Optimization Than SGD

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #50 Poster – In Wed Poster Session B Zeyuan Allen-Zhu

## Zeroth-Order Stochastic Variance Reduction for Nonconvex Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #51 Poster – In Wed Poster Session B Sijia Liu · Bhavya Kailkhura · Pin-Yu Chen · Paishun Ting · Shiyu Chang · Lisa Amini

#### Structured Local Minima in Sparse Blind Deconvolution

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #52 Poster – In Wed Poster Session B Yuqian Zhang  $\cdot$  Han-wen Kuo  $\cdot$  John Wright

## Algorithmic Regularization in Learning Deep Homogeneous Models: Layers are Automatically Balanced

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #53 Poster – In Wed Poster Session B Simon Du  $\cdot$  Wei Hu  $\cdot$  Jason Lee

#### Are ResNets Provably Better than Linear Predictors?

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #54 Poster – In Wed Poster Session B Ohad Shamir

### Adaptive Methods for Nonconvex Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #55 Poster – In Wed Poster Session B Manzil Zaheer  $\cdot$  Sashank Reddi  $\cdot$  Devendra Sachan  $\cdot$  Satyen Kale  $\cdot$  Sanjiv Kumar

# Alternating optimization of decision trees, with application to learning sparse oblique trees

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #56 Poster – In Wed Poster Session B Miguel A. Carreira-Perpinan · Pooya Tavallali

### GILBO: One Metric to Measure Them All

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #57 Poster – In Wed Poster Session B Alexander Alemi  $\cdot$  Ian Fischer

# Isolating Sources of Disentanglement in Variational Autoencoders $\,$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #58 Poster – In Wed Poster Session B Tian Qi Chen  $\cdot$  Xuechen Li  $\cdot$  Roger Grosse  $\cdot$  David Duvenaud

### On GANs and GMMs

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #59 Poster – In Wed Poster Session B Eitan Richardson  $\cdot$  Yair Weiss

### Assessing Generative Models via Precision and Recall

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #60 Poster – In Wed Poster Session B Mehdi S. M. Sajjadi · Olivier Bachem · Mario Lucic · Olivier Bousquet · Sylvain Gelly

# $\label{thm:convolutional} \textbf{Gather-Excite: Exploiting Feature Context in Convolutional Neural Networks}$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #61 Poster – In Wed Poster Session B

Jie Hu · Li Shen · Samuel Albanie · Gang Sun · Andrea Vedaldi

# Uncertainty-Aware Attention for Reliable Interpretation and

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #62

Poster – In Wed Poster Session B Jay Heo · Hae Beom Lee · Saehoon Kim · Juho Lee · Kwang Joon Kim · Eunho Yang · Sung Ju Hwang

### Forecasting Treatment Responses Over Time Using Recurrent Marginal Structural Networks

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #63 Poster - In Wed Poster Session B

Bryan Lim · Ahmed M. Alaa · Mihaela van der Schaar

### Backpropagation with Callbacks: Foundations for Efficient and Expressive Differentiable Programming

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #64 Poster – In Wed Poster Session B

Fei Wang  $\cdot$  James Decker  $\cdot$  Xilun Wu $\cdot$  Gregory Essertel  $\cdot$  Tiark Rompf

### Recurrent World Models Facilitate Policy Evolution

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #65 Poster – In Wed Poster Session B David Ha $\cdot$ J?<br/>rgen Schmidhuber

#### Long short-term memory and Learning-to-learn in networks of spiking neurons

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #66

Poster – In Wed Poster Session B Guillaume Bellec · Darjan Salaj · Anand Subramoney · Robert Legenstein · Wolfgang Maass

#### Distributed Weight Consolidation: A Brain Segmentation Case Study

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #67 Poster – In Wed Poster Session B

 Patrick McClure · Charles Zheng · Jakub Kaczmarzyk · John Rogers- Lee · Satra Ghosh · Dylan Nielson · Peter A Bandettini · Francisco Pereira

# Learning to Play With Intrinsically-Motivated, Self-Aware

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #68 Poster – In Wed Poster Session B

Nick Haber · Damian Mrowca · Stephanie Wang · Li Fei-Fei · Daniel Yamins

### Gradient Descent for Spiking Neural Networks

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #69 Poster - In Wed Poster Session B Dongsung Huh · Terrence J Sejnowski

### Demystifying excessively volatile human learning: A Bayesian $\,$ persistent prior and a neural approximation

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #70 Poster - In Wed Poster Session B Chaitanya Ryali  $\cdot$  Gautam Reddy  $\cdot$  Angela J Yu

### Temporal alignment and latent Gaussian process factor inference in population spike trains

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #71 Poster – In Wed Poster Session B Lea Duncker  $\cdot$  Maneesh Sahani

Information-based Adaptive Stimulus Selection to Optimize Communication Efficiency in Brain-Computer Interfaces

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #72Poster – In Wed Poster Session B Boyla Mainsah  $\cdot$  Dmitry Kalika  $\cdot$  Leslie Collins  $\cdot$  Siyuan Liu  $\cdot$  Chan-

#### Model-based targeted dimensionality reduction for neuronal population data

dra Throckmorton

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #73 Poster – In Wed Poster Session B Mikio Aoi  $\cdot$  Jonathan W Pillow

#### Objective and efficient inference for couplings in neuronal networks

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #74Poster – In Wed Poster Session B

Yu Terada · Tomoyuki Obuchi · Takuya Isomura · Yoshiyuki Kabashima

#### The emergence of multiple retinal cell types through efficient coding of natural movies

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #75 Poster - In Wed Poster Session B Samuel Ocko  $\cdot$  Jack Lindsey  $\cdot$  Surya Ganguli  $\cdot$  Stephane Deny

### Benefits of over-parameterization with EM

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #76 Poster – In Wed Poster Session B Ji Xu  $\cdot$  Daniel Hsu  $\cdot$  Arian Maleki

### On Coresets for Logistic Regression

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #77 Poster – In Wed Poster Session B Alexander Munteanu · Chris Schwiegelshohn · Christian Sohler · David Woodruff

### On Learning Markov Chains

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #78 Poster – In Wed Poster Session B Yi HAO · Alon Orlitsky · Venkatadheeraj Pichapati

### Contextual Stochastic Block Models

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #79Poster – In Wed Poster Session B Yash Deshpande - Subhabrata Sen - Andrea Montanari - Elchanan Mossel

#### Estimators for Multivariate Information Measures in General Probability Spaces

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #80 Poster – In Wed Poster Session B Arman Rahimzamani · Himanshu Asnani · Pramod Viswanath · Sreeram Kannan

### Blind Deconvolutional Phase Retrieval via Convex Programming

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #81 Poster – In Wed Poster Session B Ali Ahmed  $\cdot$  Alireza Aghasi  $\cdot$  Paul Hand

# Entropy Rate Estimation for Markov Chains with Large State

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #82 Poster – In Wed Poster Session B Yanjun Han  $\cdot$  Jiantao Jiao  $\cdot$  Chuan-Zheng Lee  $\cdot$  Tsachy Weissman  $\cdot$ Yihong Wu · Tiancheng Yu

### Bandit Learning in Concave N-Person Games

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #83 Poster – In Wed Poster Session B Mario Bravo · David Leslie · Panayotis Mertikopoulos

### Depth-Limited Solving for Imperfect-Information Games

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #84 Poster – In Wed Poster Session B Noam Brown  $\cdot$  Tuomas Sandholm  $\cdot$  Brandon Amos

### The Physical Systems Behind Optimization Algorithms

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #85 Poster – In Wed Poster Session B Lin Yang  $\cdot$  Raman Arora  $\cdot$  Vladimir braverman  $\cdot$  Tuo Zhao

## The Nearest Neighbor Information Estimator is Adaptively Near Minimax Rate-Optimal

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #86 Poster – In Wed Poster Session B Jiantao Jiao  $\cdot$  Weihao Gao  $\cdot$  Yanjun Han

### Robust Learning of Fixed-Structure Bayesian Networks

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #87 Poster – In Wed Poster Session B Yu Cheng · Ilias Diakonikolas · Daniel Kane · Alistair Stewart

## Information-theoretic Limits for Community Detection in Network Models

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #88 Poster – In Wed Poster Session B Chuyang Ke  $\cdot$  Jean Honorio

#### Generalizing Graph Matching beyond Quadratic Assignment Model

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #89 Poster – In Wed Poster Session B Tianshu Yu $\cdot$  Junchi Yan $\cdot$  Yilin Wang $\cdot$  Wei Liu $\cdot$ baoxin Li

### Improving Simple Models with Confidence Profiles

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #90 Poster – In Wed Poster Session B Amit Dhurandhar  $\cdot$  Karthikeyan Shanmugam  $\cdot$  Ronny Luss  $\cdot$  Peder A Olsen

### Online Learning with an Unknown Fairness Metric

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #91 Poster – In Wed Poster Session B Stephen Gillen  $\cdot$  Christopher Jung  $\cdot$  Michael Kearns  $\cdot$  Aaron Roth

### Legendre Decomposition for Tensors

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #92 Poster – In Wed Poster Session B Mahito Sugiyama  $\cdot$  Hiroyuki Nakahara  $\cdot$  Koji Tsuda

### The Price of Privacy for Low-rank Factorization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #93 Poster – In Wed Poster Session B Jalaj Upadhyay

# Empirical Risk Minimization in Non-interactive Local Differential Privacy Revisited

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #94 Poster – In Wed Poster Session B Di Wang  $\cdot$  Marco Gaboardi  $\cdot$  Jinhui Xu

### Differentially Private Change-Point Detection

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB Poster – In Wed Poster Session B Rachel Cummings  $\cdot$  Sara Krehbiel  $\cdot$  Yajun Mei  $\cdot$  Rui Tuo  $\cdot$  Wanrong Zhang

### Scalable Laplacian K-modes

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #96 Poster – In Wed Poster Session B Imtiaz Ziko  $\cdot$  Eric Granger  $\cdot$  Ismail Ben Ayed

### Geometrically Coupled Monte Carlo Sampling

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #97 Poster – In Wed Poster Session B Mark Rowland · Krzysztof Choromanski · Fran?ois Chalus · Aldo Pacchiano · Tamas Sarlos · Richard E Turner · Adrian Weller

## Continuous-time Value Function Approximation in Reproducing Kernel Hilbert Spaces

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #98 Poster – In Wed Poster Session B Motoya Ohnishi · Masahiro Yukawa · Mikael Johansson · Masahi Sugiyama

### Faster Online Learning of Optimal Threshold for Consistent F-measure Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #99 Poster – In Wed Poster Session B Xiaoxuan Zhang · Mingrui Liu · Xun Zhou · Tianbao Yang

### Reducing Network Agnostophobia

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #100 Poster – In Wed Poster Session B Akshay Raj Dhamija · Manuel G?nther · Terrance Boult

# Life-Long Disentangled Representation Learning with Cross-Domain Latent Homologies

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #101 Poster – In Wed Poster Session B Alessandro Achille  $\cdot$  Tom Eccles  $\cdot$  Loic Matthey  $\cdot$  Chris Burgess  $\cdot$  Nicholas Watters  $\cdot$  Alexander Lerchner  $\cdot$  Irina Higgins

## Near-Optimal Policies for Dynamic Multinomial Logit Assortment Selection Models

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #102 Poster – In Wed Poster Session B Yining Wang  $\cdot$  Xi Chen  $\cdot$  Yuan Zhou

### The Everlasting Database: Statistical Validity at a Fair Price

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #103 Poster – In Wed Poster Session B Blake Woodworth  $\cdot$  Vitaly Feldman  $\cdot$  Saharon Rosset  $\cdot$  Nati Srebro

### Scalar Posterior Sampling with Applications

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #104 Poster – In Wed Poster Session B Georgios Theocharous · Zheng Wen · Yasin Abbasi · Nikos Vlassis

### Iterative Value-Aware Model Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #105 Poster – In Wed Poster Session B Amir-massoud Farahmand

### A Lyapunov-based Approach to Safe Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #106 Poster – In Wed Poster Session B Yinlam Chow  $\cdot$  Ofir Nachum  $\cdot$  Edgar Duenez-Guzman  $\cdot$  Mohammad Ghavamzadeh

### Temporal Regularization for Markov Decision Process

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #107 Poster – In Wed Poster Session B Pierre Thodoroff  $\cdot$  Audrey Durand  $\cdot$  Joelle Pineau  $\cdot$  Doina Precup

### Maximum Causal Tsallis Entropy Imitation Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #108 Poster – In Wed Poster Session B Kyungjae Lee  $\cdot$  Sungjoon Choi $\cdot$  Songhwai Oh

### Policy Optimization via Importance Sampling

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #109 Poster – In Wed Poster Session B

Alberto Maria Metelli · Matteo Papini · Francesco Faccio · Marcello Restelli

### Reinforcement Learning of Theorem Proving

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #110 Poster – In Wed Poster Session B Cezary Kaliszyk  $\cdot$  Josef Urban  $\cdot$  Henryk Michalewski  $\cdot$  Miroslav Ol??k

Simple random search of static linear policies is competitive for reinforcement learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #111 Poster – In Wed Poster Session B Horia Mania  $\cdot$  Aurelia Guy  $\cdot$  Benjamin Recht

### Meta-Gradient Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #112 Poster – In Wed Poster Session B Zhongwen Xu  $\cdot$  Hado van Hasselt  $\cdot$  David Silver

### Reinforcement Learning for Solving the Vehicle Routing Problem

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #113 Poster – In Wed Poster Session B MohammadReza Nazari · Afshin Oroojlooy · Lawrence Snyder · Martin Takac

# Learn What Not to Learn: Action Elimination with Deep Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #114 Poster – In Wed Poster Session B Tom Zahavy · Matan Haroush · Nadav Merlis · Daniel J Mankowitz · Shie Mannor

## REFUEL: Exploring Sparse Features in Deep Reinforcement Learning for Fast Disease Diagnosis

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #115 Poster – In Wed Poster Session B Yu-Shao Peng $\cdot$ Kai-Fu Tang $\cdot$ Hsuan-Tien Lin $\cdot$ Edward Chang

### Learning Plannable Representations with Causal InfoGAN $\,$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #116 Poster – In Wed Poster Session B Thanard Kurutach · Aviv Tamar · Ge Yang · Stuart Russell · Pieter Abbeel

#### Improving Exploration in Evolution Strategies for Deep Reinforcement Learning via a Population of Novelty-Seeking Agents

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #117 Poster – In Wed Poster Session B Edoardo Conti · Vashisht Madhavan · Felipe Petroski Such · Joel Lehman · Kenneth Stanley · Jeff Clune

### Transfer of Deep Reactive Policies for MDP Planning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #118 Poster – In Wed Poster Session B Aniket (Nick) Bajpai  $\cdot$  Sankalp Garg  $\cdot$  Mausam

### Q-learning with Nearest Neighbors

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #119 Poster – In Wed Poster Session B Devavrat Shah  $\cdot$  Qiaomin Xie

# Distributed Multitask Reinforcement Learning with Quadratic Convergence $\,$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #120 Poster – In Wed Poster Session B Rasul Tutunov  $\cdot$  Dongho Kim  $\cdot$  Haitham Bou Ammar

## Breaking the Curse of Horizon: Infinite-Horizon Off-Policy Estimation

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #121 Poster – In Wed Poster Session B Qiang Liu  $\cdot$  Lihong Li  $\cdot$  Ziyang Tang  $\cdot$  Dengyong Zhou

## Constrained Cross-Entropy Method for Safe Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #122 Poster – In Wed Poster Session B Min Wen  $\cdot$  Ufuk Topcu

### Representation Balancing MDPs for Off-policy Policy Evaluation

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #123 Poster – In Wed Poster Session B Yao Liu · Omer Gottesman · Aniruddh Raghu · Matthieu Komorowski · Aldo A Faisal · Finale Doshi-Velez · Emma Brunskill

### Dual Policy Iteration

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #124 Poster – In Wed Poster Session B Wen Sun  $\cdot$  Geoffrey Gordon  $\cdot$  Byron Boots  $\cdot$  J. Bagnell

## ${\tt Occam's}$ razor is insufficient to infer the preferences of irrational agents

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #125 Poster – In Wed Poster Session B Stuart Armstrong  $\cdot$  S?ren Mindermann

### Transfer of Value Functions via Variational Methods

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #126 Poster – In Wed Poster Session B Andrea Tirinzoni · Rafael Rodriguez Sanchez · Marcello Restelli

## Reinforcement Learning with Multiple Experts: A Bayesian Model Combination Approach

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #127 Poster – In Wed Poster Session B Michael Gimelfarb  $\cdot$  Scott Sanner  $\cdot$  Chi-Guhn Lee

# Online Robust Policy Learning in the Presence of Unknown Adversaries

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #128 Poster – In Wed Poster Session B Aaron Havens  $\cdot$  Zhanhong Jiang  $\cdot$  Soumik Sarkar

# A Bayesian Approach to Generative Adversarial Imitation Learning $\,$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #129 Poster – In Wed Poster Session B Wonseok Jeon  $\cdot$  Seokin Seo  $\cdot$  Kee-Eung Kim

### $\label{thm:continuous} \mbox{ Verifiable Reinforcement Learning via Policy Extraction}$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #130 Poster – In Wed Poster Session B Osbert Bastani · Yewen Pu · Armando Solar-Lezama

### Deep Reinforcement Learning of Marked Temporal Point Processes

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #131 Poster – In Wed Poster Session B Utkarsh Upadhyay  $\cdot$  Abir De $\cdot$  Manuel Gomez Rodriguez

### On Learning Intrinsic Rewards for Policy Gradient Methods

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #132 Poster – In Wed Poster Session B Zeyu Zheng  $\cdot$  Junhyuk Oh $\cdot$  Satinder Singh

### Evolution-Guided Policy Gradient in Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #133 Poster – In Wed Poster Session B Shauharda Khadka  $\cdot$  Kagan Tumer

## Meta-Reinforcement Learning of Structured Exploration Strategies

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #134 Poster – In Wed Poster Session B

Abhishek Gupta · Russell Mendonca · YuXuan Liu · Pieter Abbeel · Sergey Levine

## Diversity-Driven Exploration Strategy for Deep Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #135 Poster – In Wed Poster Session B

Zhang-Wei Hong · Tzu-Yun Shann · Shih-Yang Su · Yi-Hsiang Chang · Tsu-Jui Fu · Chun-Yi Lee

### Genetic-Gated Networks for Deep Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #136 Poster – In Wed Poster Session B

Simyung Chang  $\cdot$  John Yang  $\cdot$  Jaeseok Choi  $\cdot$  Nojun Kwak

# Memory Augmented Policy Optimization for Program Synthesis and Semantic Parsing

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #137 Poster – In Wed Poster Session B

Chen Liang · Mohammad Norouzi · Jonathan Berant · Quoc V Le · Ni Lao

### Hardware Conditioned Policies for Multi-Robot Transfer Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #138 Poster – In Wed Poster Session B

Tao Chen · Adithyavairavan Murali · Abhinav Gupta

## Reward learning from human preferences and demonstrations in $\mbox{\sc Atari}$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB Poster – In Wed Poster Session B

Foster – In wed Foster Session B Borja Ibarz · Jan Leike · Tobias Pohlen · Geoffrey Irving · Shane Legg · Dario Amodei

# Graph Convolutional Policy Network for Goal-Directed Molecular Graph Generation

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #140 Poster – In Wed Poster Session B

Jiaxuan You  $\cdot$ Bowen Liu  $\cdot$ Zhitao Ying  $\cdot$  Vijay Pande  $\cdot$  Jure Leskovec

### Visual Reinforcement Learning with Imagined Goals

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #141 Poster – In Wed Poster Session B

Ashvin Nair - Vitchyr Pong - Murtaza Dalal - Shikhar Bahl - Steven Lin - Sergey Levine

### Playing hard exploration games by watching YouTube

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #142 Poster – In Wed Poster Session B

Yusuf Aytar · Tobias Pfaff · David Budden · Thomas Paine · Ziyu Wang · Nando de Freitas

## Unsupervised Video Object Segmentation for Deep Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #143 Poster – In Wed Poster Session B

Vikash Goel · Jameson Weng · Pascal Poupart

### Learning to Navigate in Cities Without a Map

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #144 Poster – In Wed Poster Session B

Piotr Mirowski · Matt Grimes · Mateusz Malinowski · Karl Moritz Hermann · Keith Anderson · Denis Teplyashin · Karen Simonyan · koray kavukcuoglu · Andrew Zisserman · Raia Hadsell

### Learning Abstract Options

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #145 Poster – In Wed Poster Session B Matthew Riemer  $\cdot$  Miao Liu  $\cdot$  Gerald Tesauro

### Object-Oriented Dynamics Predictor

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #146 Poster – In Wed Poster Session B Guangxiang Zhu  $\cdot$  Zhiao Huang  $\cdot$  Chongjie Zhang

## A Deep Bayesian Policy Reuse Approach Against Non-Stationary Agents

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #147 Poster – In Wed Poster Session B

YAN ZHENG · Zhaopeng Meng · Jianye Hao · Zongzhang Zhang · Tianpei Yang · Changjie Fan

### Learning Attentional Communication for Multi-Agent Cooperation

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #148 Poster – In Wed Poster Session B Jiechuan Jiang  $\cdot$  Zongqing Lu

### Deep Dynamical Modeling and Control of Unsteady Fluid Flows

Wed Dec 5th 05:00 - 07:00 PM @ Room 210 & 230 AB #149 Poster – In Wed Poster Session B

Jeremy Morton · Antony Jameson · Mykel J Kochenderfer · Freddie Witherden

## Adaptive Skip Intervals: Temporal Abstraction for Recurrent Dynamical Models

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #150 Poster – In Wed Poster Session B Alexander Neitz  $\cdot$  Giambattista Parascandolo  $\cdot$  Stefan Bauer  $\cdot$  Bernhard Sch?lkopf

# ${\tt Zero-Shot\ Transfer\ with\ Deictic\ Object-Oriented\ Representation}$ in Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #151 Poster – In Wed Poster Session B Ofir Marom  $\cdot$  Benjamin Rosman

# $\label{thm:condition} \mbox{Total stochastic gradient algorithms and applications in reinforcement learning}$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #152 Poster – In Wed Poster Session B Paavo Parmas

# Fighting Boredom in Recommender Systems with Linear Reinforcement Learning $\,$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #153 Poster – In Wed Poster Session B Romain WARLOP  $\cdot$  Alessandro Lazaric  $\cdot$  J?r?mie Mary

### Randomized Prior Functions for Deep Reinforcement Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #154 Poster – In Wed Poster Session B Ian Osband  $\cdot$  John Aslanides  $\cdot$  Albin Cassirer

# Scalable Coordinated Exploration in Concurrent Reinforcement Learning $% \left( 1\right) =\left( 1\right) \left( 1\right) +\left( 1\right) \left( 1\right) \left( 1\right) +\left( 1\right) \left( 1\right) \left($

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #155 Poster – In Wed Poster Session B Maria Dimakopoulou  $\cdot$  Ian Osband  $\cdot$  Benjamin Van Roy

 $\label{lem:context-dependent} \mbox{ confidence bounds for directed exploration}$ 

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #156 Poster – In Wed Poster Session B

Raksha Kumaraswamy · Matthew Schlegel · Adam White · Martha White

#### Multi-Agent Generative Adversarial Imitation Learning

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #157 Poster – In Wed Poster Session B

Jiaming Song  $\cdot$  Hongyu Ren $\cdot$  Dorsa Sadigh  $\cdot$  Stefano Ermon

# Actor-Critic Policy Optimization in Partially Observable Multiagent Environments

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #158 Poster – In Wed Poster Session B

Sriram Srinivasan · Marc Lanctot · Vinicius Zambaldi · Julien Perolat · Karl Tuyls · Remi Munos · Michael Bowling

# Learning to Share and Hide Intentions using Information Regularization $% \left( 1\right) =\left( 1\right) +\left( 1\right) +\left($

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #159 Poster – In Wed Poster Session B Daniel Strouse · Max Kleiman-Weiner · Josh Tenenbaum · Matt

### Credit Assignment For Collective Multiagent RL With Global

Botvinick · David Schwab

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #160 Poster – In Wed Poster Session B Duc Thien Nguyen  $\cdot$  Akshat Kumar  $\cdot$  Hoong Chuin Lau

## Multi-Agent Reinforcement Learning via Double Averaging Primal-Dual Optimization

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #161 Poster – In Wed Poster Session B Hoi-To Wai · Zhuoran Yang · Princeton Zhaoran Wang · Mingyi Hong

# Learning Others' Intentional Models in Multi-Agent Settings Using Interactive POMDPs

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #162 Poster – In Wed Poster Session B Yanlin Han  $\cdot$  Piotr Gmytrasiewicz

Bayesian Control of Large MDPs with Unknown Dynamics in  ${\tt Data-Poor}$   ${\tt Environments}$ 

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #163 Poster – In Wed Poster Session B Mahdi Imani · Seyede Fatemeh Ghoreishi · Ulisses M. Braga-Neto

# Negotiable Reinforcement Learning for Pareto Optimal Sequential Decision-Making

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #164 Poster – In Wed Poster Session B Nishant Desai  $\cdot$  Andrew Critch  $\cdot$  Stuart J Russell

### rho-POMDPs have Lipschitz-Continuous epsilon-Optimal Value

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #165 Poster – In Wed Poster Session B Mathieu Fehr  $\cdot$  Olivier Buffet  $\cdot$  Vincent Thomas  $\cdot$  Jilles Dibangoye

### Learning Task Specifications from Demonstrations

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #166 Poster – In Wed Poster Session B Marcell Vazquez-Chanlatte  $\cdot$  Susmit Jha  $\cdot$  Ashish Tiwari  $\cdot$  Mark Ho  $\cdot$  Sanjit Seshia

## Teaching Inverse Reinforcement Learners via Features and ${\tt Demonstrations}$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #167 Poster – In Wed Poster Session B Luis Haug  $\cdot$  Sebastian Tschiatschek  $\cdot$  Adish Singla

### Single-Agent Policy Tree Search With Guarantees

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #168 Poster – In Wed Poster Session B Laurent Orseau · Levi Lelis · Tor Lattimore · Theophane Weber

### From Stochastic Planning to Marginal MAP

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #169 Poster – In Wed Poster Session B Hao Cui  $\cdot$  Radu Marinescu  $\cdot$  Roni Khardon

# ${\tt Dual\ Principal\ Component\ Pursuit:}\ {\tt Improved\ Analysis\ and\ Efficient\ Algorithms}$

Wed Dec 5th 05:00 – 07:00 PM @ Room 210 & 230 AB #170 Poster – In Wed Poster Session B Zhihui Zhu $\cdot$  Yifan Wang $\cdot$  Daniel Robinson $\cdot$  Daniel Naiman $\cdot$  Rene Vidal $\cdot$  Manolis Tsakiris

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