Xin Jin | Curriculum Vitae

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Education

The Ohio State University **Columbus, USA**
Ph.D. student of Computer Science and Engineering *Aug. 2018–Present*

- Research interests: Natural Language Processing, Data Mining, Transfer Learning.
- Selected courses: Advanced Artificial Intelligence, Introduction to Data Mining, Machine Learning and Statistical Pattern Recongnition, Natural Language Processing with Deep Learning (Stanford CS224n online).
- Cumulative GPA: 3.9/4.0

Northwestern Polytechnical University **Xi'an, China**
B.S. degree of Communication Engineering *Sep. 2013–Jul. 2017*

- **Cumulative GPA**: 91.3/100 (rank 1/306); **Major GPA**: 95.0/100 (rank 1/306).
- **Selected awards**: Outstanding Prize Scholarship (top 0.1% at Northwestern Polytechnical University, 30 among 26027); National Scholarship (top 1.4 % at Northwestern Polytechnical University); Excellent graduate (top 5.8% at Northwestern Polytechnical University).
- **Core courses**: Multimedia Communication, Computer Networks, WLAN, Mobile Communication, etc.

Publication

- **Xin Jin**, Wei Lu, Shiqi Liu, Zuqing Zhu, "On Multi-Layer Restoration in Optical Networks with Encryption Solution Deployment", IEEE/OSA Optical Fiber Communication Conference (Acceptance Ratio: 30%), Mar. 2018.
- Wei Lu, **Xin Jin**, Zuqing Zhu, "Game Theoretical Flexible Service Provisioning in IP over Elastic Optical Networks", IEEE International Conference on Optical Communications and Networks, Aug. 2017.
- Xiaofeng Lu, Ruonan Zhang, Yuliang Zhou, Jiawei Liu, **Xin Jin**, Qi Guo, and Chang Cao, "Convolution Modeling and Antenna De-embedding for Wideband Spatial mmWave Channel Measurement", IEEE Wireless Communications and Networking Conference, Mar. 2017.

Research Experience

The Ohio State University **Columbus, USA**
Individual research/ Course projects *Aug. 2018–Present*

Project 1: Suggestion Mining (SemEval 2019) and Sentiment Analysis

- Working on suggestion mining using pre-trained models (BERT/OpenAI GPT) and transfer learning for in/out-of-domain online review corpora.
- Applied traditional ML algorithms (naive bayes, KNN, logistic regression and SVM) and CNN/ RNN based on Golve for suggestion mining and sentiment analysis.
- Designed locality sensitive hashing sketch and conducted minhashing for Sentiment Labelled Sentence Data Set.

Project 2: State-space search and reinforcement learning for Pacman

- Implemented DFS, BFS, uniform cost, and A* search algorithms to solve navigation/ traveling salesman problems and multiagent minimax and expectimax algorithms in Pacman agent platform.
- Applied model-based and model-free reinforcement learning algorithms, applied to the AIMA textbook's Gridworld, Pacman, and a simulated crawling robot.

- Implemented hidden Markov models by exact inference using the forward algorithm and approximate inference via particle filters.

Fudan University, Internship Research Program **Shanghai, China**
Research Assistant to Prof. Xipeng Qiu *Apr. 2018–Jul. 2018*

Project: Deep Learning for Natural Language Processing

- Worked on the multi-task learning framework to jointly learn across multiple related tasks.
- Participated in developing three mechanisms of sharing information to model text with task-specific and shared layers based on recurrent neural network.

University of Science and Technology of China, National Innovation Program **Hefei, China**
Research Assistant to Prof. Zuqing Zhu *Feb. 2017–Mar. 2018*

Project 1: Design of Restoration Schemes for OTN Encryption Architecture

- Addressed the security vulnerabilities in three encryption network architectures deployed in optical transport network, and introduced multi-layer restoration as security protection solution.
- Proposed a multi-layer restoration scheme and an auxiliary-graph algorithm to improve the cost effectiveness based on operational expense, and implemented numerical simulations in NSFNET topology.

Project 2: Research on Dynamic Failure Recovery Scheme in Multi-layer EONs

- Applied co-degradation of QoS, demand classification and dynamic routing to recover affected traffic flows affected by outages in heavily loaded multi-layer EONs.
- Proposed a mixed-integer linear programming model to formulate broken virtual mapping topology.
- Designed a heuristic algorithm, based on MCMF algorithm, dynamic programming algorithm and classified co-degradation algorithm, to solve the NP-hard problem of MILP model.
- Launched simulations in eight-node EON and achieved respectively 56% and 68% performance improvement in terms of degradation penalty and decline of blocking probability compared with existing recovery strategies.

Project 3: Design of Flexible Service Provisioning in IP over EONs

- Addressed the problems of the existing studies assuming the network service provisioning managed in a entirely centralized manner.
- Formulated a stackelberg game in which the service operator is the leader and incoming requests are the followers.
- Analyzed the existence of Stackelberg Equilibriums in the single-logic-link and multiple-logic-links scenarios.

Northwestern Polytechnical University, Undergraduate Research Program **Xi'an, China**
Research Assistant to Prof. Ruonan Zhang *Mar. 2016 – Feb. 2017*

Project: mmWare Channel Measurement and Modeling

- Addressed the issue to de-embed the antenna effect from captured channel profiles for the wideband sounding.
- Proposed a convolutional modeling approach to express a synthesized spatial channel response, and designed a two-step antenna de-embedding algorithm to de-embed the antenna effect and mitigate the system noise.
- Proposed another de-embedding algorithm for mmWare channel measurement based on Tikhonove regularization.
- Analyzed the measured channel response and obtained result of sparse impulse propagation model by computing data at frequencies of 73GHz and 73.4GHz, and achieved the correlation coefficient reaching more than 95%.

Academic Projects

Northwestern Polytechnical University, National Undergaduate Innovation Program **Xi'an, China**
"2D-Robot Fish" research group leader of Robot Innovation Center (Advisor: Prof. Haobin Shi)Oct. 2014 - Jul. 2016

Project: Research on Models and Strategies of 2D Robot Fish in Fuzzy Underwater Environment

- Led a team of ten students in designing robot fish competition algorithms and strategies. Our duty

was designing antagonistic strategies and programming at the platforms "URWPGSim2D" and "FIRA SimuroSot".
- My contributions:
  - Designed segmental robot fish action models and an area divided system.
  - Proposed ant-colony-algorithm-based dynamic routing algorithms and cooperative obstacle avoidance algorithms.
  - Designed antagonistic strategies for robot competition item "Grabbing competition", "Delivering-ball competition", "Survival challenging" and "Fira 11vs.11".
  - Designed a robot data analysis software by C#, and applied a Chinese software patent.
- Won (1) the Championship at the item "Grabbing-ball competition" in the *2015* "Kenrobot" International Underwater Robot Competition; (2) the Championship at item "Fira 11vs.11", the First Prizes at item "Delivering-ball Competition" and "Survival challenging" in *2015* "Robocup" Chinese Robot Competition; (3) the Championship at item "Fira 11vs.11" in 17^{th} National robotics Championships.

Selected Awards and Honors

- **Excellent Graduate** (top 5.8% of Northwestern Polytechnical University) 06/2017
- **National Scholarship** (top 1.4%), by Ministry of Education, China 11/2016, 11/2015, 11/2014
- **Outstanding Prize Scholarship/Distinguished Student** of Northwestern Polytechnical University (top 0.1%) 11/2015
- First Prize Scholarship of Northwestern Polytechnical University (top 5%) 12/2016, 11/2015
- Meritorious Winner, Mathematical Contest In Modeling (MCM) (top 11%) 02/2016
- **Championship** at item "Fira11vs.11", *2015* Chinese Robot Competition, by Chinese Association of Automation 10/2015
- First Prizes at item "Delivering-ball Competition" & "Survival challenging", same as above 10/2015
- **Champion** at item "Grabbing-ball Competition", *2015* International Underwater Robot Competition, by International League of Underwater Robot 07/2015
- Second Prize of "Challenge Cup" National Undergraduate Extra-curricular Academic Works Competition, by Ministry of Education, China 04/2015
- Third Prize of National Undergraduate Electronic Design Competition, by Ministry of Industry and Information Technology, China 08/2015

Teaching Experience

- Autumn 2018: Computer Network (CSE 3461), OSU
- Spring 2019: Computer Network (CSE 3461), OSU

Sills

- **Software Programming**: C, C++, C#, Java, html5/css, Matlab/CPLEX, Python, Latex.

Additional Information

- **Hobbies**
  - Swimming and jogging.
  - Reading, especially for history about ancient China and Asia.