Xin Jin | Curriculum Vitae

Room 413, School of Computer Science, Fudan University – Shanghai, China
(+86) 15655135663 • xjin00@mail.ustc.edu.cn
http://home.ustc.edu.cn/∼xjin00

Education

Northwestern Polytechnical University **Xi'an, China**
B.S. 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**: Digital Signal Processing, Signals and Systems, Principle of Communication, Multimedia Communication, Computer Networks, WLAN, Mobile Communication, Principle and Application of Microcomputer, Information Exchange Technique, Principle of Microcomputer and Embedded system.

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, 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

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

Project: Deep Learning for Natural Language Processing

- Learning basic points of deep learning and natural language processing.
- Working on interesting topics of natural language processing.

University of Science and Technology, 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.
- Completed paper "On Multi-Layer Restoration in Optical Networks with Encryption Solution Deployment" to *OFC'2018* as the first author, which was accepted to be presented in San Diego, USA, Mar. 2018.

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

- Searched, synthesized, deduced, and implemented simulations of existing protection and restoration algorithms in EONs. Then analyzed and compared the performance of different algorithms.
- 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.
- Completed the graduation thesis: "Research on Dynamic Failure Recovery Scheme in Multi Layer Elastic Optical Network".

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.
- Completed the invited paper "Game Theoretical Flexible Service Provisioning in IP over Elastic Optical Networks" to *ICOCN'2017* as a co-author.

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%.
- Compiled and published the paper "Convolution Modeling and Antenna De-embedding for Wideband Spatial mmWave Channel Measurement" as a co-author.

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.

Northwestern Polytechnical University, National Undergaduate Innovation Program **Xi'an, China**
Research group member (Advisor: Prof. Lixin Li) *Jan. 2014 - Dec. 2015*

Project: Designing of Remote Operation and Control System Based on UAV

- Designed a multi-joint arm posture model based on acceleration sensor network
- Designed a data transport system with the transmission module ZigBee.
- Designed a flight control Android app by Java, and applied a Chinese software patent.
- Won Second Prize of "Challenge Cup" National Undergraduate Extra-curricular Academic Works Competition at Shaanxi Province Division.

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 10%) 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

Sills

- **Software Programming**: C, C++, C#, Java, html5/css, Matlab/CPLEX.
- **Hardware Programming**: VHDL/Verilog for FPGA, C for MCS-51/MSP430.

Additional Information

- **Extracurricular activities**
  - Vice chairman of "Blue Heart" Young Volunteers Association, Xi'an, China Sep. 2013 - Dec. 2015
  - Team leader of Electronic enthusiasts Association, Xi'an, China Sep. 2013 - Nov. 2016
- **Hobbies**
  - Swimming and jogging.
  - Reading, especially for history about ancient China and Asia.