

EDUCATION	<p>Tongji University, Shanghai, China Sep 2016 – Jun 2020 (<i>Exp.</i>)</p> <p>B.Eng. in Software Engineering. (currently 4th year)</p> <ul style="list-style-type: none"> Cumulative GPA: 4.82 / 5.00 (equivalent to 93.2 / 100) Ranking: 2 / 185 (top 1.1%) Related Courses and Scores: <i>Data Mining & Analysis</i> (A), <i>Machine Learning</i> (A), <i>Object-Oriented Programming</i> (A), <i>Data Structures</i> (A), <i>Design and Analysis of Algorithms</i> (A) <i>Operating System</i> (A), <i>Database System Principles</i> (A), <i>Compiler Principle</i> (A), <i>Computer Architecture</i> (A), <i>Computer Networks</i> (A).
RESEARCH EXPERIENCE	<p>Facebook Maps Team, Facebook Inc. Feb 2019 – Present</p> <p>Research Intern (remotely). <i>Supervised by Research Scientist Dr. Saikat Basu and Dr. Guan Pang.</i></p> <ul style="list-style-type: none"> Project: Topological-Aware Loss Function for Detecting Linear Structures from Image <ul style="list-style-type: none"> Propose a new loss function to punish the fragmented prediction for linear structures, which reduces the total variance in the patches of linear structures. Improve results for road extraction, land segmentation and cell boundary detection on topological metrics. Keyword: Image Segmentation, CNN, Structure-Aware CNN Highlight: Submitted 1 paper to <i>CVPR 2020</i> <hr/> <p>Deep Learning Lab, Tongji University Mar 2018 – Sep 2019</p> <p>Undergraduate Research Student. <i>Supervised by Prof. Yin Wang.</i></p> <ul style="list-style-type: none"> Project: Road Extraction from Satellite Imagery <ul style="list-style-type: none"> Design new stacked U-Net architecture with outputs for both road segment and intersections. Propose original road extraction approach that utilizes both massive GPS trajectories and satellite images. Integrate new 1D transposed convolution, GPS argumentation and rendering methods which enable our approach achieve 5% higher accuracy and 40% boost in generalization ability when predicting new area. Keyword: Image Segmentation, CNN, Image Processing, Weakly-Supervised Learning, Point-based CNN Highlight: Published 3 papers as the first author, including <i>CVPR</i>, <i>ACM SIGSPATIAL Workshop</i> and <i>CVPRW</i> papers <hr/> <p>X-Lab (Lab for Intelligent Operation and Maintenance), Tongji University Sep 2018 – Jan 2019</p> <p>Undergraduate Research Student. <i>Supervised by Prof. Qingfeng Du and Dr. Juan Qiu.</i></p> <ul style="list-style-type: none"> Project: Time-Series Anomaly Detection for Operation and Maintenance of Cloud Services <ul style="list-style-type: none"> Propose a novel method that combines LSTM with VAE for anomaly detection from imbalanced performance index data from online servers. Keyword: Time-Series, LSTM, VAE, GMM Highlight: Applied for 1 Chinese Patent <hr/> <p>Interests: <i>Computer Vision, Deep Learning, Explainable AI</i></p>
PUBLICATION	<p>Conference Paper</p> <p>[1] T. Sun, Z.-L. Di, P.-Y. Che, C. Liu, and Y. Wang, “Leveraging Crowdsourced GPS Data for Road Extraction from Aerial Imagery”, in <i>Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)</i>, Long Beach, CA, USA, 2019. Link</p> <p>Workshop Paper</p> <p>[1] T. Sun, Z.-H. Chen, W.-X. Yang, Y. Wang, “Stacked U-Nets with Multi-Output for Road Extraction”, in <i>Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)</i>, Salt Lake City, UT, USA, 2018. Link</p> <p>[2] T. Sun, Z.-L. Di and Y. Wang, “Combining Satellite Imagery and GPS Data for Road Extraction”, in <i>Proceedings of the ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery (GeoAI)</i>, Seattle, WA, USA, 2018. (Oral) Link</p>

PAPER REVIEWING	<ul style="list-style-type: none"> ▪ IEEE JSTARS (IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, SCI, IF=3.4), reviewed 1 submission. Jan 2019 ▪ ACM SIGSPATIAL 2019, reviewed 6 submissions (as Sub-Reviewer) Jul 2019
SELECTED PROJECTS	<p>Data Mining & Analysis, Course Project, Tongji University Mar 2018 – Jun 2018 Discovery the Frequent Patterns of Online Shopping Data. <i>Supervised by Prof. Weixiong Rao</i></p> <ul style="list-style-type: none"> ▪ Keyword: GCN (Graph Convolution Network), Frequent Pattern Set, Decision Tree, Feature Embedding <hr/> <p>Data Warehouse, Course Project, Tongji University Sep 2018 – Jan 2019 Amazon Movie: Knowledge Graph. <i>Supervised by A/Prof. Hongmin Zhu.</i></p> <ul style="list-style-type: none"> ▪ Design Spark and Neo4j programs that mine the graph information of Amazon Movie dataset. <hr/> <p>Human-Computer Interaction, Course Project, Tongji University Sep 2017 – Jan 2018 Gaze Control: Eye Gaze Detection API. <i>Supervised by A/Prof. Ying Shen.</i></p> <ul style="list-style-type: none"> ▪ Detecting eye pupils location and heading in 3D space using OpenCV and reconstructing the gaze point at the screen. <hr/> <p>Are You Feeling Tired?, National SITP Project Apr 2017 – Present Granted by the <i>National Students Innovation Training Program (SITP) of China</i></p> <ul style="list-style-type: none"> ▪ Develop mobile App to help people custom their working schedule corresponding to their biological rhythm.
CAMPUS ACTIVITIES	<p>Dept. of Academic and Culture Promotion, Students Union of Tongji University Sep 2016 – Jun 2018 President</p> <ul style="list-style-type: none"> ▪ Inviting famous scholars and industry experts to give lectures at the campus. ▪ Working with the Department members to organize lectures. ▪ Maintaining online accounts of the Department. The WeChat account has nearly 10k subscribers.
AWARDS & SCHOLARSHIPS	<ul style="list-style-type: none"> ▪ National Scholarship, China's Ministry of Education 2018 Fall – 2019 Spring For top 0.2% undergraduate students nationwide. ▪ National Scholarship, China's Ministry of Education 2017 Fall – 2018 Spring ▪ Student Scholarship, First Prize, Tongji University 2016 Fall – 2017 Spring For top 5% students in the university. ▪ 16th "Challenge Cup" National College Student Curricular Academic Science and Technology Works Competition, Special Prize (in Chinese: "挑战杯"), Shanghai 2019 ▪ Mathematical Contest in Modeling, Honorable Mention Award, COMAP 2018 ▪ 33rd China College Students Physics Contest (First Prize), Shanghai 2016 A nationwide contest for college students on Physics.
LANGUAGE PROFICIENCY	<ul style="list-style-type: none"> ▪ Chinese (Mandarin): Native language. ▪ English: Fluent. <ul style="list-style-type: none"> » TOEFL: 107 (Reading: 29, Listening: 30, Speaking: 23, Writing: 25) » GRE: 323 (Verbal: 153, Quant: 170, AW: 4.0)
SKILLS	<p>Programming</p> <ul style="list-style-type: none"> ▪ Proficient: Python, C, C++ ▪ Intermediate: JavaScript, Java, Swift, SQL, MATLAB <p>Research</p> <ul style="list-style-type: none"> ▪ Machine Learning: PyTorch, Keras, TensorFlow, Pandas, Sk-Learn, OpenCV ▪ Academic Writing: $\text{T}_{\text{E}}\text{X}$, $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$ <p>General</p> <ul style="list-style-type: none"> ▪ Developing: Xcode, Visual Studio, MySQL, Spark ▪ Multimedia & Design: Adobe Photoshop, Adobe Lightroom, Autodesk AutoCAD, Autodesk Inventor ▪ Office: Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Access