XINLONG YIN

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EDUCATION

University of Michigan, EECS (Transferred form SJTU) *August 2019 - Present*
B.S. in Computer Engineering

Selected Coursework: Computer Networks, Embedded Systems, Operating Systems, Machine Learning, Data Structures and Algorithms, Computer Organization, Linear Algebra, Java Programming, Critical Reasoning (Department of Philosophy), Multidisciplinary Design Program
Cumulative GPA: 3.94/4.0

Shanghai Jiao Tong University (SJTU) *September 2017 - August 2019*
B.S. in Electrical and Computer Engineering

Selected Coursework: Probabilistic Methods in Engineering, Introduction to Programming, Programming and Data Structures, Introduction to Logic Design
Cumulative GPA: 3.57/4.0

RESEARCH INTERESTS

Research Area: Computer Networks and Distributed Information Systems
Problem Interests: Cyber-Security and Privacy Analytics, Machine Learning in Cloud Systems
Research Methodologies: AI, ML, Deep Learning, Statistics, Graph Theory, Stochastic Processes
Faculty Mentors (and References): Ranjan Pal, Mingyan Liu, Kang G. Shin

RESEARCH EXPERIENCE

Robust Cyber-risk Quantification in IoT-Networked Systems January 2020 - Present

· I built an application that simulates the propagation of modern cyber attacks in IoT network environments, and robustly quantified (correlated) tail-risks in IoT-networked systems. In the process of obtaining accurate and closed-form statistical estimates of net loss impact in a given network, I applied concepts from stochastic processes, probability theory, and mathematical time-series models. This research will have a significant impact on the cyber-risk quantification process that is critical to cyber-risk managers (e.g, insurers) to draft effective in-demand coverage policies benefiting the digital society and improving cyber-security via ensuring dense and profitable coverage markets.
Faculty Mentors - Ranjan Pal, Mingyan Liu

De-Anonymizing Consumer Preferences from Market Data (SURE Research) May 2020 - Present

· Certain classes of business applications for the social good (medical research, as an example) require the knowledge of individual consumer preferences, for improved performance - both socially and commercially. However, due to privacy constraints, market data for such applications is at best aggregated over consumers. I devised a deep learning model that uses knowledge of aggregate preferences in a data set and pre-known preference distributions to predict individual data labels. I used the power of Generative Adversarial Networks (GAN) to achieve significant improvement in preference labeling accuracy compared to other state-of-the-art methods that predict individual preferences from their distributions.
Faculty Mentors - Ranjan Pal, Mingyan Liu

Accelerating Performance of Machine Learning Model Inference Systems May 2020 - Present

· I built model inference workload pipelines for improved multiplexing and system speed, that will be used for popular ML applications that include speech recognition, machine translation, text classification and Q&A models. With the current trend of users (individuals and organizations) preferring to use cloud computing services to run complex machine learning tasks, my systems research will benefit cloud service providers attain QoS by consuming lesser CPU and GPU power with higher throughput - hence also reducing C2C.
Faculty Mentor - Kang G. Shin

COMMERCIAL PROJECT EXPERIENCE

Principal Financial Group, Inc. January 2020 –Current
Multidisciplinary Design Program Member

· I participated in building a website for Principal to provide better service for microbusiness owners. The website consists of a homepage that introduce the products of Principal, a calculator that can recommend benefit packages and calculate the price of them based on users' inputs, and a forum that enables users to discussion anything related to benefit packages. We built the website using React, Flask, MySQL and deployed it on the Google Cloud Platform. The website was built according to surveyed customer needs for Principal to get more connected with microbusinesses. ***Faculty Mentor*** - James Juett

SOFTWARE SKILLS

C++, C, Python, Java, MATLAB, HTML, CSS, JavaScript, C#, Verilog, ARMv8

SELECTED OUTREACH ACTIVITIES

Vice Minister of Career Department of the Student Union July 2018 –July 2019
Shanghai Jiao Tong University

· I was in charge of the publicity group, that publishes recruitment and course information on behalf of the institute. I also taught the members in my group some design principles that can make such information concise and clear.

Teaching Assistant of Advanced Brand and Branding Management May 2019 - August 2019
Shanghai Jiao Tong University

· I revised the slides for the lectures on brand communication, brand equity and brand crisis management. I also helped students get a better understanding of the lectures during my office hours.

Leader of the Education Assistance team December 2018 - January 2019
Lvchun Middle School, Yunnan, China

· I arranged the whole education assistance activity by communicating with the principal of the Lvchun Middle School. I was also in charge of teaching mathematics to Grade 8 students in the school.

PROFESSIONAL MEMBERSHIPS

Student Member of the IEEE and the ACM

PUBLICATIONS (CLICK TO SEE)

R. Pal, Z. Huang, **X. Yin**, M. Liu, S. Lototsky, J. Crowcroft: Sustainable Catastrophic Cyber-risk Management in IoT Societies, *To Appear in IEEE/INFORMS Winter Simulation Conference (WSC)*, 2020

R. Pal, Z. Huang, S. Lototsky, **X. Yin**, M. Liu, J. Crowcroft, S. De, N. Sastry, B. Nag: Will Catastrophic Cyber-Risk Aggregation Thrive in the IoT Age?: An Economic Take on Managing Aggregate Heavy-Tailed Risks, *Received a Minor Revision Decision from the ACM Transactions on Management Information Systems* [To be Presented at the INFORMS Annual Meeting, 2020]

R. Pal, Z. Huang, **X. Yin**, M. Liu, J. Crowcroft, S. Lototsky, S. Tarkoma, S. De, N. Sastry: Aggregate Cyber-Risk Management in the IoT Age, *Submitted to the IEEE Internet of Things Journal* [Extension of WSC 2020 Paper]

SELECTED HONORS AND AWARDS

My research "The feasibility of cyber-risk management to ensure social good" was mentioned by the *Forbes Magazine*

Received the prestigious 2020 Summer Undergraduate Research (SURE) award from the University of Michigan to conduct summer research.

Accepted to the 2016 Tsinghua University Summer Camp (Acceptance Rate - 2/200 from my high school)

HOBBIES

Sketching, Oil Painting, Baritone, Badminton, Swimming, Table Tennis