MAKAN ARASTUIE

makan.arastuie@gmail.com   makanarastuie.com   github.com/Makan-Ar

EDUCATION

Jan. 2018 – Aug. 2020 Toledo, OH	**MSE, Computer Science & Engineering** @ University of Toledo o GPA: 4.00 / 4.00 | Advisor: Kevin S. Xu o Research focus: Machine Learning & Social Network Analysis o Thesis: Generative Models of Link Formation and Community Detection in Continuous-time Dynamic Networks
Aug. 2013 – Dec. 2017 Toledo, OH	**BSc, Computer Science & Engineering** @ University of Toledo o GPA: 3.91 / 4.00 | Minor in Mathematics | Summa Cum Laude | Tau Beta Pi, ACM, IEEE

PROFESSIONAL EXPERIENCES

Industry

Jan. 2022 – Present Aug. 2020 – Jan. 2022 Jan. 2020 – July 2020 Longmont, CO	**Sr. Machine Learning Engineer** @ *Seagate* **Machine Learning Engineer II** **Data Science and Machine Learning Intern** o Developing ML models to optimize hard drive calibration processes and reliability tests o Created a masked autoencoder architecture to identify and generate samples from high performing regions of a calibration search space o Reduced the duration of a calibration process of a hard drive product line by about 33% (2hr) while maintaining accuracy using deep unsupervised learning o Trained industry-specific language models and utilized them in downstream natural language processing tasks such as summarization, information retrieval, and sentiment analysis o Collected an industry-specific corpus (~2B tokens) by cleaning >7M docs from 12 sources o Mentoring and managing interns on diverse machine learning projects o **Technologies**: Python, PyTorch, SQL, Docker, AWS, DVC, Flask
Aug. 2015 – Dec. 2017 Toledo, OH	**Student Software Developer** @ University of Toledo (Simulation & Gaming Studio) o Collaborated with Twine.it and improved their RESTful APIs average response time by ~30% o Developed an online educational game to simulate disaster scenes for emergency responders o **Technologies**: C#, C++, JavaScript, SQL, HTML, CSS, Azure, REST
Jan. 2015 – May 2015 Canton, OH	**Software Developer Intern** @ Diebold Nixdorf o Improved ATM's front-end UX and UI which reduced withdraw transaction time by about 40% o Upgraded ATM's massaging simulator to keep it compatible with new back-end updates o **Technologies**: C#, JavaScript, RabbitMQ, HTML, CSS, Object oriented programming

Research

Jan. 2018 – Dec. 2019 May 2016 – Dec. 2017 Toledo, OH	**Graduate Research Assistant** @ IDEAS Lab (Univ. of Toledo EECS Dept.) **Undergraduate Research Assistant** o Proposed a generative model for continuous-time networks of relational events with scalable and consistent estimators *(publication [1])* o Developed a Python package (DyNetworkX) for the study of dynamic networks *(publication [3])* o Designed a machine learning post-processing technique to improve prediction accuracy of human activity, using smartphone sensor data *(publications [4, 5])* o Analyzed the impacts of local subgraphs on future interactions in social networks *(publication [2])* o **Technologies**: Python, TensorFlow, PyTorch

Teaching

Teaching Assistant   @ University of Toledo

2018 – 2019
Toledo, OH

- o EECS 1510, *Object Oriented Programming* – Spring 2018
- o EECS 3100, *Embedded Systems* – Summer 2018
- o EECS 1100, *Digital Logic Design* – Fall 2018 & Spring 2019

PUBLICATIONS

First author

2020   [1] M Arastuie, S Paul, and K Xu. "CHIP: A Hawkes Process Model for Continuous-time Networks with Scalable and Consistent Estimation" *NeurIPS [view paper]*

2019   [2] M Arastuie and K Xu. "Personalized Degrees: Effects on Link Formation in Dynamic Networks from an Egocentric Perspective" *Companion Proceedings of The Web Conference [view paper]*

Co-author

2022   [3] T Hilsabeck, M Arastuie, and K Xu. "A hybrid adjacency and time-based data structure for analysis of temporal networks" *Applied Network Science* (Journal) *[view paper]*

2019   [4] M Sloma, M Arastuie, and K Xu. "Effects of Activity Recognition Window Size and Time Stabilization in the SHL Recognition Challenge'' *Human Activity Sensing, Springer [view paper]*

2018   [5] M Sloma, M Arastuie, and K Xu. "Activity Recognition by Classification with Time Stabilization for the SHL Recognition Challenge" *Proceedings of UbiComp [view paper]*

PROFESSIONAL SERVICES

2020 – 2022   **Program Committee:** SocInfo (2020, 2022)

2018 – 2022   **Reviewer:** The Web Conference (WWW) (2019, 2020, 2021)
     IEEE Transactions on Computational Social Systems (2021) – IEEE BigData (2020)
     Journal of Data Science and Analytics (2020, 2021) – Journal of Complex Networks (2019)
     SocInfo (2019, 2020, 2022)

PROJECTS

Feb. 2018 – Present   **Founding Contributor of DyNetworkX** – IDEAS Lab
An open-source Python package for the analysis of discrete & continuous-time dynamic networks
- o Documentation & source code: dynetworkx.readthedocs.io

Jan. 2016 – July 2016   **Connected UT** – Solo Project
A website for University of Toledo's students to sell/buy textbooks, with extended search options
- o Source code: github.com/makan-ar/connected-ut

AWARDS

2018   **Dean's Assistantship**   @ University of Toledo
Full-ride scholarship awarded to one incoming master's student in the College of Engineering

2017   **Undergraduate Summer Research grant**   @ University of Toledo

2013   **International Student Scholarship**   @ University of Toledo

RELEVANT COURSEWORK

Natural Language Processing Specialization (Coursera MOOCs)
Deep Unsupervised Learning (Open access course by UC Berkeley / in progress)
Deep Learning Specialization (Coursera MOOCs) | Probabilistic Methods in Data Science
Machine Learning | Social and Information Networks | Artificial Intelligence
Data Learning | Linear Statistical Models | Statistical Computing