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: 4.0 / 4.0 | Advisor: Dr. 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 / 4.0 | 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 (Seagate Research Group) **Machine Learning Engineer II** **Data Science and Machine Learning Intern** o Utilizing ML to enhance the design and development of higher capacity hard drives o Designed a transformer-based surrogate model for drive media simulation to discover novel designs, resulting in a 9% improvement in our target magnetic property through active learning o Developed a self-supervised generative model to optimize hard drive calibration processes, resulting in a 33% reduction of test time (~2hrs) while maintaining accuracy o Trained industry-specific language models and utilized them in downstream natural language processing tasks such as summarization, information retrieval, and sentiment analysis o Mentoring and managing interns on diverse machine learning projects o **Technologies**: Python, PyTorch, Docker, AWS, DVC, SQL
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 API
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

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 *(pub. [1])* o Developed a Python package (DyNetworkX) for the study of dynamic networks *(pub. [3])*

- o Designed a machine learning post-processing technique to improve prediction accuracy of human activity, using smartphone sensor data *(publications [4])*
- o Analyzed the impacts of local subgraphs on future interactions in social networks *(pub. [2])*
- o **Technologies**: Python, TensorFlow, PyTorch

Teaching

2018 – 2019
Toledo, OH

Teaching Assistant @ University of Toledo

- 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]*

2018 [4] 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

Program Committee: SocInfo (2020, 2022)

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

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