

Fengyi Tang

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EXPERIENCES

MACHINE LEARNING SCIENTIST II

Amplitude Analytics, San Francisco, CA

October 2021 - Present

- Improved company churn model from 0.65 to 0.84 AUC. Used to derive a company KPI for taxonomy adoption.
- Developed a faster algorithm for ranking simple paths on stochastic graphs to visualize customer journeys.

MACHINE LEARNING RESEARCH, ILLIDAN LAB

Michigan State University, East Lansing, MI

August 2017 - August 2021

- Developed a dialog system to identify language markers that can detect early-stage mild cognitive impairment.
- Thesis projects led to a \$3.9M NIH grant awarded to the lab that was featured in local news.

RESEARCH COORDINATOR

Weill Cornell Medical College, New York, NY

May 2019 - August 2019

- Developed “adversarial precision sensing”, a technique that leverages 2 competing neural nets to do personalized feature selection on a budget-constraint with non-i.i.d. data; led to a first-authored publication in ICDM 2020.

DATA SCIENCE SUMMER INTERN

MIT Laboratory of Computational Physiology, Cambridge, MA

May 2018 - August 2018

- Developed “retaining privileged information” that enables sample-efficient multitask learning for neural nets; led to a first-authored publication in KDD 2019.

SELECTED PUBLICATIONS

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- **Fengyi Tang**, Lifan Zeng, Fei Wang, and Jiayu Zhou (2020). “Adversarial Precision Sensing with Healthcare Applications”. 2020 IEEE International Conference on Data Mining (**ICDM’20**).
 - **Fengyi Tang**, Ikechukwu Uchendu, Fei Wang, Hiroko Dodge, Jiayu Zhou (2020). “Scalable Diagnostic Screening of Mild Cognitive Impairment Using AI Dialogue Agent”. **Nature Scientific Reports**.
 - **Fengyi Tang**., Betty HC Cheng (2020). “Protecting Temporal Signatures Using Synchronized Chaotic Circuits”. Hawaiian International Conference of System Sciences 2020 (**HICSS-53**).
 - **Fengyi Tang**, Cao Xiao, Fei Wang, Jiayu Zhou, and Li-wei H. Lehman (2019). “Retaining Privileged Information for Multi-Task Learning”. In Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (**KDD ’19**).
 - Xi Zhang, **Fengyi Tang**, Hiroko Dodge, Jiayu Zhou, and Fei Wang (2019). “MetaPred: Meta-Learning for Clinical Risk Prediction with Limited Patient Electronic Health Records”. **KDD’19**.

SOFTWARE

Convogym | Github

September 16, 2021

A python library for fine-tuning chatbots toward goal-oriented conversations using active learning and RL.

PersonaGPT | Model Card

October 12, 2020

A GPT-2 based chatbot capable of generating personalized dialog given various personality traits.

SKILLS

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- Machine Learning: reinforcement learning, NLP, unsupervised learning, graph ML
 - Technical Environments: Python, Pytorch, Tensorflow, DGL, Flask, MySQL, HTML & CSS
 - Functional Skills: project management, grant proposal writing, ML life cycle, ML infrastructure

EDUCATION

MICHIGAN STATE UNIVERSITY

Ph.D. in Computer Science | Advisor: Jiayu Zhou

Aug. 2017 - Sept. 2021

UNIVERSITY OF CALIFORNIA SAN DIEGO

B.S. in Human Biology & M.S. in Biology

Sept. 2012 (B.S), Sept. 2014 (M.S.)