

Yifan Zhu

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Education

Aalto University

Espoo, Finland

M.Sc. IN **COMPUTER SCIENCE** (WITH HONOURS)

Aug. 2021 - Jul. 2023

- **Track:** Algorithm, Logic, and Computation
- **Minor:** Machine Learning, Data Science and Artificial Intelligence
- **Average grade:** 4.92 / 5.0
- **Master Thesis:** Interactive Personalization for Explainability via Human-in-the-loop Multi-Objective Bayesian Optimization, supervised by Prof. Antti Oulasvirta.

University of Edinburgh

Edinburgh, U.K.

VISITING STUDENT TO SCHOOL OF INFORMATICS

Sep. 2019 - Dec. 2019

- **Nominated by home university**
- **Courses taken:** Introductory Applied Machine Learning: 84% (A), Database Systems: 71% (A), Software Design and Modelling: 64% (B).

Nanjing University of Aeronautics and Astronautics

Nanjing, China

B.ENG. IN **COMPUTER SCIENCE AND TECHNOLOGY**

Sep. 2017 - Jun. 2021

- **GPA:** 4.0 / 5.0
- **Weighted Average Mark:** 90%
- **Ranking:** 7/137

Professional Experience

- Sep.2023-
Present **Doctoral Researcher**, Probabilistic Machine Learning group, Aalto University
- Feb.2023-
May.2023 **Research Assistant**, Computational Behavior Lab, Aalto University
- Jun. 2022-
Dec.2022 **Thesis Worker**, Computational Behavior Lab, Aalto University
- Oct. 2020-
Jan.2021 **Consulting SAP Intern**, Accenture

Publications

PUBLISHED

- Suyog Chandramouli*, **Yifan Zhu***, Antti Oulasvirta. 2023. Interactive Personalization of Classifiers for Explainability using Multi-Objective Bayesian Optimization. In Proceedings of the 31st ACM Conference on User Modeling, Adaptation and Personalization (UMAP '23). Association for Computing Machinery, New York, NY, USA, 34–45.
- Yun Du, Xin Guo, Chenyang Shi, **Yifan Zhu**, Bohan Li. 2018. DSDCS: Detection of Safe Driving via Crowd Sensing. In Proceedings of the 14th International Conference on Advanced Data Mining and Applications (ADMA'18). 170-177.

Scientific Activities

PRESENTATIONS

- Jun. 2023. *Interactive Personalization of Classifiers for Explainability using Multi-Objective Bayesian Optimization*. UMAP'23, Limassol, Cyprus.

POSTERS

Aug. 2023. *Interactive Personalization of Classifiers for Explainability using Multi-Objective Bayesian Optimization*. ELLIS Doctoral Symposium 2023, Helsinki, Finland.

Apr. 2023. *Interactive Personalization of Classifiers for Explainability using Multi-Objective Bayesian Optimization*. HelsinCHI Symposium 2023, Helsinki, Finland.

Research Experience

Personalized Text-to-Image Generation with Bayesian Optimization

Espoo, Finland

RESEARCH ASSISTANT, SUPERVISOR: PROF. ANTTI OULASVIRTA, ADVISOR: DR. SUYOG

Jan. 2023 - Jul. 2023

CHANDRAMOULI

- Objective: Provide users with personalized Large language models to generate aesthetically preferred images.
- Designed, implemented, and conducted a pilot study to evaluate feasibility.

Interactive Personalization for Explainability via Human-in-the-loop Multi-Objective Bayesian Optimization

Espoo, Finland

MASTER'S THESIS, SUPERVISOR: PROF. ANTTI OULASVIRTA, ADVISOR: DR. SUYOG CHANDRAMOULI

Jun. 2022 - Dec. 2022

- Proposed a general framework to personalize a black-box model with Human-in-the-loop and Multi-Objective Bayesian Optimization.
- Designed and implemented a case study in Explainable Machine Learning for evaluating the proposed personalization framework.
- Conducted a user study with 12 participants for evaluating the efficacy of our framework in the case study.
- Published a paper to **UMAP 2023** as a co-first author.

Computation Offloading in Edge Computing of Industrial Internet based on Deep Reinforcement Learning

Nanjing, China

GRADUATION THESIS, SUPERVISOR: PROF. KUN ZHU

Jun. 2020 - Jun. 2021

- Formulated a multi-objective computation offloading optimization problem in Industrial Internet.
- Implemented a Deep Reinforcement Learning algorithm with PyTorch to solve each subproblem to obtain the pareto front: adopted pointer network and attention mechanism to model the problem and dynamically adapt to problem setting; adopted Actor-Critic method to train the pointer network.
- Done several simulations with two problem settings and three different trained DRL model to analyze the results and validate the algorithm's performance.
- Marked as 94% from the supervisor; Marked as 90% from the reviewer.

Internet Word-of-Mouth Analysis in data mining insight

Nanjing, China

GROUP MEMBER IN MATHEMATICAL CONTEST IN MODELING 2020, SUPERVISOR: A.PROF. JIE WEN

Mar. 2020

- Group's work: provided online sales strategy and identified critical design features based on the analysis of reviews and ratings by utilizing NLP, SVM, Autoregressive moving average model, and Elastic Net Regression.
- Utilized the combination of pretrained fastText word embedding and support vector machine classifier to predict the sentiment score of each word in the reviews.
- Awarded to be Meritorious Winner.

Network Quality Data Analysis Based on Big Data and Artificial Intelligence Technology

Nanjing, China

GROUP LEADER OF STUDENT RESEARCH TRAINING PROGRAM, SUPERVISOR: PROF. KUN ZHU

Jan. 2019 - Sep. 2019

- Objective: Collect data of network quality by studying incentive mechanism and adopting USRP. Construct a network quality real-time visualization map with Singular Value Thresholding algorithm. Predict network quality and analyze network fault based on AI.
- Developed an Android APP with Reverse Auction Technology and MySQL for data collection.
- Obtained a software copyright.

Detection of Safe Driving Via Crowd Sensing

Nanjing, China

GROUP MEMBER OF STUDENT RESEARCH TRAINING PROGRAM, SUPERVISOR: A.PROF. BOHAN LI

Dec. 2017 - Sep. 2018

- Objective: Detect and predict extreme driving behaviors by utilizing Crowd-Sensing, Bayesian Decision Theory, and Neural Networks.
- Studied Crowdsourcing, Incentive Mechanisms, and Bayesian Decision Theory; Assisted with APP front-end development.
- Co-published a paper in the proceedings of the International Conference on Advanced Data Mining and Applications 2018.

Awards, Fellowships, & Grants

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|-----------|---|---------------------------|
| 2022 | M.Sc. Thesis Grant , Foundation for Aalto University Science and Technology | <i>Espoo,
Finland</i> |
| 2021 | College Outstanding Graduate , Nanjing University of Aeronautics and Astronautics | <i>Nanjing,
China</i> |
| 2020 | Meritorious Winner , Mathematical Contest In Modeling 2020 | <i>U.S.A</i> |
| 2018-2020 | Excellent Student Scholarship – First Prize , Nanjing University of Aeronautics and Astronautics | <i>Nanjing,
China</i> |
| | Academic Scholarship – First Prize , Nanjing University of Aeronautics and Astronautics | <i>Nanjing,
China</i> |
| 2018 | National Scholarship , Ministry of Education of P.R.China | <i>China</i> |