Daolang Huang

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EDUCATIONAL BACKGROUND

Aalto University, Doctoral progamme in Science   July 2022 - Present

- First-year doctoral student in Probabilistic Machine Learning group (PML) and Machine and Human Intelligence research group, co-supervised with Prof. Samuel Kaski and Prof. Luigi Acerbi
- Funded by Finnish Centre Finnish Center for Artificial Intelligence (FCAI)

Aalto University, Master of Science   Sept. 2020 - May 2022

- GPA: 4.68/5 (Major 5/5), Major in Machine Learning, Data Science and Artificial Intelligence (Macadamia)
- Honours Programme in the Department of Computer Science
- Aalto University Scholarship (100% tuition waiver)

Jinan University, Bachelor of Engineering   Sept. 2016 - July 2020

- GPA: 87/100 (Major 89/100), major in Computer Science and Technology
- Honorary Awards: First-class Scholarship for Outstanding Students of JNU, 2018

PUBLICATION

- **Huang, D.**, Filstroff, L., Mikkola, P., Zheng, R., & Kaski, S. (2022 August). Bayesian Optimization Augmented with Actively Elicited Expert Knowledge. arXiv preprint arXiv:2208.08742.

- **Huang, D.**, & Perez, R. F. (2021 July). Technical report. SSELDnet - A Fully End-to-End Sample-Level Framework for Sound Event Localization and Detection. In *IEEE AASP challenge on Detection and Classification of Acoustic Scenes and Events 2021*.

- Zheng R., Zhang, Y., **Huang, D.**, & Chen, Q. (2020 August). Sequential Convolution and Runge-Kutta Residual Architecture for Image Compressed Sensing. In *European Conference on Computer Vision 2020* (pp. 232-248). Springer, Cham.

RESEARCH EXPERIENCE

Master Thesis: Human-in-the-Loop Bayesian Optimization   Oct. 2021 - May 2022

- Proposed Preferential Bayesian Neural Network (PBNN) based on Siamese network structure for expert knowledge elicitation
- We provided a unified solution based on Bayesian neural network for Bayesian optimization, so that expert knowledge can be incorporated into the BO surrogate model in sophisticated manner

Targeted-Aware Bayesian Active Learning   June 2021 - Aug. 2021

- Developed a deep active learning system that transferred functional prior distribution from GP regression to Bayesian neural network for treatment effect prediction
- Improved decision-making under multi-objective problems
- Used continual learning to replace retraining step to speed up the algorithm

Sound Events Localization and Detection using Deep Learning   Oct. 2020 - June 2021

- Proposed an end-to-end sample-level SELD framework which investigates the possibility to apply representation learning directly to the raw audio
- Explored different deep learning architectures, as well as data augmentation techniques, to improve the performance of sound detection and localization

Image Compressed Sensing   Nov. 2019 - Aug. 2020

- Proposed Runge-Kutta Convolutional Compressed Sensing Network (RK-CCSNet) and achieved state-of-the-art performance in deep compressed sensing
- Proposed a sequential convolution structure that introduced structural prior for linear sensing and a novel residual architecture based on Runge-Kutta Method

Biochemical System Research   May 2019 - July 2019

- Created a model that can replicate the behavior of the target system by quantitatively optimizing the kinetic rate to fit the concentration rate curve of the targeted biochemical reactant through the back-propagation technique
- Assumed the complex reactants in the synthetic model, found the potential reaction of the target biochemical system

WORK EXPERIENCE

Aalto University - Department of Computer Science   Oct. 2021 - May 2022

- Master thesis worker of Probabilistic Machine Learning Group (PML)
- Supervisor: Prof. Samuel Kaski
- Topic: Human-in-the-Loop Bayesian Optimization

Aalto University - Department of Computer Science   June 2021 - Aug. 2021

- Summer intern of Probabilistic Machine Learning Group (PML)
- Supervisor: Prof. Samuel Kaski
- Topic: Targeted-aware Bayesian active learning

Jinan University - University of Birmingham Joint Institute at JNU   Feb. 2020 - June 2020

- Teaching Assistant of course "C Programming"
- Responsible for assignment correction and Q&A section

Neuedu Education Technology Co., Ltd.   June 2019 - Aug. 2019

- Summer intern, Python developer
- Collaborated with teammates to develop some web crawler projects using Scrapy

SKILLS & LANGUAGES

- **Programming Language**: Python, Java, C, R
- **Specialized Skills**: Machine learning, Deep learning, Computer vision, Audio information retrieval
- **Language**: English (C1), Mandarin (native)