Byoungwoo Park

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Education

Inha University Incheon, Republic of Korea
B.S. in Statistics.(GPA:3.86/4.5 — 3.5/4.0) *03/2014 – 08/2021*

- Academic Excellence Scholarship (2020)
- **Courses**: Mathematical Statistics, Statistical Computing, Bayesian Statistics, Differential Geometry, Topology, Real Analysis.

Research Interests

My research interest lies in the *probabilistic modeling of data* and exploring its application across diverse domains with a specific focus on time-series analysis. Drawing inspiration from mathematical and statistical developments like Stochastic Differential Equation (SDE), Stochastic Optimal Control (SOC), and Sequential Monte Carlo (SMC), I have designed principled algorithmic frameworks for machine learning pipelines.

Publications

Conference Papers (*Equal contribution)

Sungwoo Park*, Byoungwoo Park*, Moontae Lee and Changhee Lee "Neural Stochastic Differential Games for Time-series Analysis.", in *International Conference on Machine Learning (ICML)*, 2023

Journal Papers

Byoungwoo Park, Sungwoo Park, and Junseok Kwon "Self-Augmentation Based on Noise-Robust Probabilistic Model for Noisy Labels.", in *IEEE Access (IEEE)*, 2022 (This work was done while I was an undergraduate student.)

Preprints

Sungwoo Park and Byoungwoo Park "Markov Diffusion Calibration Game.", *preprint*, 2022

Research Experience

Systems Intelligence Lab, KAIST Daejeon, Republic of Korea
Research Intern *06/2023 - Present*

The Decision Intelligence Lab, CAU Seoul, Republic of Korea
Research Assistant *02/2023 - 03/2023*

- Explored a non-linear Bayesian filtering algorithm for continuous-discrete longitudinal time-series data.

Computer Vision and Machine Learning Lab, CAU Seoul, Republic of Korea
Research Assistant *09/2021 - 01/2023*

- Developed a game-theoretic framework that utilizes multi-agent neural controlled SDEs for analyzing time-series data.
- Employed neural SDEs to effectively model irregularly sampled time-series data.
- Utilized the stochastic differential games framework to calibrate deep neural network classifiers.

Undergraduate Research Assistant (Advisor: Junseok Kwon) *12/2020-08/2021*

- Designed and implemented a robust training method to enhance the performance of deep neural network classifiers in the presence of noisy labels.
- Developed data augmentation method for point cloud dataset.

Academic Service (Reviewer)

- Reviewer: ICML 2022

Patents

- Probabilistic model-based label self-enhancement system and method: Byoungwoo Park, Sung Woo Park, and Junseok Kwon. KOR Patent 10-2022-0150472

Other Experience

Republic of Korea Air Force Pocheon, Republic of Korea
Discharged upon Completing Military Service as a Sergeant *07/2014-07/2016*