Suro Lee

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EDUCATION

Columbia University — Dec 2023 (expected)
Master of Science – Computer Science, Machine Learning Track — New York, US

Korea Advanced Institute of Science and Technology (KAIST) — Feb 2022
Bachelor of Science – Computer Science, Specialization in Artificial Intelligence — Daejeon, Korea
Minor in Electrical Engineering

RELEVANT COURSEWORK

Math: Real Analysis, Linear Algebra, Probability and Statistics, Differential Equations

Machine Learning: Computational Learning Theory, Statistical Learning Theory, Machine Learning, Artificial Intelligence, Computer Vision, AI Based Software Engineering, Natural Language Processing

EXPERIENCE

Columbia University — Sept 2022 – Dec 2022
Teaching Assistant, Computing for Business Research — New York, US
- Supported 70+ graduate students in Python, MATLAB, C, Bash, R, MySQL, TensorFlow, and Git by holding weekly office hours
- Code-reviewed and provided feedback for biweekly programing assignments

Samsung Research — Jan 2022 – Jul 2022
Software Engineer, Visual Perception Team — Seoul, Korea
- Integrated temporal video segmentation research from *Samsung AI Center - NY*, action recognition research from *Samsung AI Center - Cambridge*, and automatic speech recognition research from *Samsung Research* into an interactive AI recipe navigation web demo
- Exhibited at Samsung Research Open Lab 2022

KAIST INA Lab — Feb 2021 – Sep 2021
Undergraduate Researcher — Daejeon, Korea
Project: Content-Aware and Task-Aware Variable Rate Image Compression using Compressive Autoencoders
- Exploited content-specific redundancies by training a compressive autoencoder with a dataset consisting of only one type of content such as faces (i.e., CelebA Dataset), achieving up to 2% improvement in terms of PSNR
- Optimized the compressive autoencoder for a task-specific loss instead of a perceptual loss, which outperformed JPEG in image classification up to 11% in terms of accuracy for low resolution images

Koh Young Technology — Mar 2019 – Aug 2019
Research Intern, Machine Intelligence Team — Yongin, Korea
- Implemented a prototype for a distributed, real-time SMT (surface-mount technology) inspection process using Apache Kafka, Apache Spark, and Apache HBase—which was later developed into a successful full-fledged product
- Achieved up to 10x speed up from batch processing, significantly decreasing the number of defects in the solder paste printing process

SELECTED PROJECTS

Masked Emotion Detection for COVID-19 | *Computer Vision* — Sep 2020 – Nov 2020
- Improved emotion detection performance on masked faces by training the deep learning model with synthetic masked data and existing masked datasets
- Made architectural modifications to the Deep Emotion model, achieving improvements up to 16%
- Visualized the salient facial regions for emotion classification to show that our masked dataset helps the model better focus on the eyes for emotion detection

TECHNICAL SKILLS

Languages: Python, C++, C
Machine Learning: PyTorch, TensorFlow
Web Development: HTML, CSS, Svelte, Flask, Bootstrap, Node.js

Mobile Development: Android Studio, Flutter, Unity
Distributed Systems: Apache Kafka, Apache Spark, Apache HBase
Developer Tools: Docker, GitHub