Suro Lee

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Education

Columbia University Dec 2023 (expected)
Master of Science – Computer Science, Machine Learning Track *New York, USA*
- Incoming Masters Student for Fall 2022

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, Intro to Linear Algebra, Probability and Statistics, Differential Equations, Calculus I & II
Machine Learning: Machine Learning, Intro to AI, Intro to Computer Vision, AI Based Software Engineering, NLP

Experience

Samsung Research Jan 2022 – Jul 2022
Research 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

Hybrid Adaptive Ant Colony System for TSP | *Metaheuristic Optimization* Sep 2020 – Dec 2020
- Sped up convergence speeds by using randomized local search at the initial stages of the ant colony system (ACS)
- Dynamically tuned ACS parameters throughout the algorithm to encourage exploration away from local optima
- Outperformed the randomized two-opt algorithm, and removed the need to set experiment-specific parameters in conventional ACS

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
- Extended the Deep Emotion model, achieving improvements up to 16% on three emotion datasets

Technical Skills

Languages: Python, C++, C, Java, JavaScript
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