

# Suro Lee

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## EDUCATION

### Columbia University

*Master of Science – Computer Science*

- Incoming Masters Student for Fall 2022
- Machine Learning Track

Feb 2024 (expected)

*New York, USA*

### Korea Advanced Institute of Science and Technology (KAIST)

*Bachelor of Science – Computer Science*

*Minor in Electrical Engineering, Specialization in Artificial Intelligence*

- GPA: 3.51/4.3
- AI Specialization GPA: 3.92/4.3

Feb 2022

*Daejeon, Korea*

## EXPERIENCE

### Samsung Research

*Research Engineer, Visual Perception Team*

- 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

Jan 2022 – Jul 2022

*Seoul, Korea*

### KAIST INA Lab

*Undergraduate Researcher*

Project: Content-Aware and Task-Aware Variable Rate Image Compression using Compressive Autoencoders

- Used a dataset consisting of only one type of content such as faces (i.e., CelebA Dataset) to train a compressive autoencoder to further exploit content-specific redundancies, 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.

Feb 2021 – Sep 2021

*Daejeon, Korea*

### Koh Young Technology

*Research Intern, KSMART Solutions Team*

- 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

Mar 2019 – Aug 2019

*Yongin, Korea*

## SELECTED PROJECTS

### Hybrid Adaptive Ant Colony System for TSP | *Metaheuristic Optimization*

Sep 2020 – Dec 2020

- Used randomized local search to speed up convergence speeds at the initial stages of 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

- Used synthetic masked data and existing masked datasets to improve emotion detection performance on masked faces
- 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

**Cloud Computing:** Apache Kafka, Apache Spark, Apache HBase

**Developer Tools:** Docker, GitHub