Suro Lee

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Education

KAIST (Korea Advanced Institute of Science and Technology) **Graduated: 2021.12**
B.S., Computer Science; Minor in Electrical Engineering; Semiminor in Artificial Intelligence
Overall GPA: 3.61/4.3 (3.57/4.0)
A.I. Semiminor GPA: 3.92/4.3 (3.80/4.0)

Research Experience

KAIST INA Lab *2020.2 – 2021.9*
Undergraduate Researcher
Advisor: Dongsu Han
Project 1: Using Side-Information for Task-Aware Image Compression

- Motivated by the idea that some channels of the compressed code contain more valuable information for classification
- Utilized side information extracted from the entropy of the compressed code channels to enhance image classification
- Extracted side information using two methods: convolutional bottleneck attention module, and feature-wise linear modulation

Project 2: Content-Aware and Task-Aware Variable Rate Image Compression using Compressive Autoencoders

- Conducted an experiment by using a dataset consisting of only one type of content such as faces (i.e., CelebA Dataset) to train the network to further exploit content-specific redundancies, achieving slight improvements in terms of MS-SSIM and PSNR.
- Achieved task-awareness by optimizing the compressive autoencoder for a task-specific loss instead of a perceptual loss. Trained the network to optimize for best performance on a certain task, such as classification. This task-aware compression network outperformed JPEG in image classification, especially under low bits-per-pixel conditions.

Koh Young Technology, R&D Division
Research Intern *2019.3 – 2019.8*
Advisor: Jaehyung Kim

- Implemented a prototype for a distributed, real-time SMT (surface-mount technology) inspection process using Apache Spark's Machine Learning Library
- Created and managed a distributed cluster for data streaming using Apache Kafka
- Achieved 5-10x speed up from batch processing.

Awards and Grants

Samsung Research Scholarship *2021.3 – 2022.3*
Samsung Research

- Received a $10,000 research grant given to outstanding students who display promising abilities in research

Short-term Undergraduate Research Grant *2021.3 – 2021.8*
KAIST

- Received a $5,000 undergraduate research grant

Long-term Undergraduate Research Grant *2020.3 – 2021.1*
KAIST

- Received a $8,500 undergraduate research grant

LINE Scholarship *2019.11*
LINE Corporation

- Received a $4,000 scholarship given to 20 students in KAIST School of Computing

Skills

Machine/Deep Learning: PyTorch, TensorFlow
Natural Language Processing: Named Entity Recognition, Information Extraction, NLTK, spacy,
Cloud-based Technologies: Apache Kafka, Apache Spark, Apache HBase
App-Development: Android Studio, Flutter, Unity, Firebase, Node.js, MongoDB
Programming Languages: C, C++, Python, Java, JavaScript, Scala
Language Proficiency: Korean (Native), English (Fluent)