Seokchan Ahn

seokchaa@uci.edu | (949) 402-7269 | Irvine, CA | linkedin.com/in/seokchanahn | https://github.com/sahn93

EDUCATION

University of California Irvine **June 2023 (expected)**
Master of Science in Computer Science Irvine, CA
- Coursework: Introduction to AI, Machine Learning, Distributed Computer Systems, Advanced Compiler Construction
- Scholarship: Korean National Graduate Scholarship for Studying Abroad, $40,000/year, 2021-2023

Seoul National University **Aug 2018**
Bachelor of Science in Computer Science, Bachelor of Business Administration Seoul, Korea
- Coursework: Algorithms, Data Structure, OOP, Computer Architecture, Operating Systems, Statistics, Linear Algebra
- Thesis: Improving Natural Language Reading Performance with Extended Skim-RNNs

WORK EXPERIENCE

Samsung Research, Samsung Electronics **Jul 2018 – Jul 2021**
Software Engineer at Neural Machine Translation Team, Natural Language Processing Lab Seoul, Korea
- **Text Translation Service**: Trained text translation models using a framework in C++ and deployed the models through Docker containers with a latency of 200ms or less for internal web service and Samsung Bixby
- **Simultaneous Translation**: Achieved an 8% improvement in translation performance by devising a novel method to generate simultaneous translation style sentences; Implemented and visualized with Python and wrote a research paper
- **ML compression**: Compressed machine translation models with less than 1% performance degradation by applying various compression techniques including quantization with TensorFlow for a Samsung Internet browser extension
- **Multinode Distributed Training**: Enabled model training using up to 64 GPUs and eight times bigger batch size by fixing a multi-node training bug in PyTorch
- **Corpus Manager**: Facilitated Data-Centric AI approach and made experiments reproducible which led to a 50% increase in efficiency by building a data management tool that automates preprocessing and model evaluation with Python
- **Speech Translation**: Improved the translation performance by 6.6% by applying a dual-decoder transformer architecture for speech translation task with TensorFlow

Korean National Police Agency **Jan 2014 – Oct 2015**
Software Developer Seoul, Korea
- **Security Equipment Management System**: Led the development and maintenance of a web-based ERP system as a full-stack developer with LAMP (Linux, Apache HTTP, MySQL, PHP) stack; Used in 1,731 police offices in South Korea

PROJECTS

- **Offloading Convolution Kernel to FPGA**: Offloaded tiled convolution kernel to FPGAs with C++ and OpenCL as a part of the OpenDNN project to achieve about 5 times better energy efficiency than GPUs
- **Node Labeling API for Apache REEF**: As a Google Summer of Code 2017 participant with the Apache REEF, designed and implemented a node labeling API in Java for cluster resource managers such as Hadoop YARN and Mesos
- **Video Demand Forecasting for File Caching**: Improved cache hit rate by 10% of a VOD company's file caching system by replacing regression-based time series prediction model with LSTM based neural network
- **Data Transfer through Camera**: Built an Android app with Java that can transfer files through a series of QR codes; Awarded $5,000 at 2015 LG CNS IoT Hackathon
- **Indoor Positioning Cart**: Orchestrated sensors to position a cart indoors with C++ and Python; Won $5,000 at 2016 Samsung Electronics IoT Innovation Challenge

PUBLICATIONS

- **Monotonic Simultaneous Translation with Chunk-wise Reordering and Refinement**: Proceedings of the Sixth Conference on Machine Translation (WMT 2021) [pdf]
- **Task Aware Multi-Task Learning for Speech to Text Tasks**: 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2021) [pdf]

SKILLS

- **Programming Language**: Python, C++, Java, JavaScript, SQL, PHP, Shell (Bash)
- **Other**: Linux, Git, GitLab CI, Docker, AWS, Hadoop, MPI / Node.js, MySQL, HTML, CSS / TensorFlow, Keras, PyTorch