

# Seokchan Ahn

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## EDUCATION

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### University of California, Irvine

June 2023 (expected)

M.S. in Computer Science

Irvine, CA

- Scholarship: Korean National Graduate Scholarship for Studying Abroad, \$40,000/year, 2021-2023
- Coursework: Introduction to Artificial Intelligence, Machine Learning, Computer and Communication Networks

### Seoul National University

Aug 2018

B.S. in Computer Science and Engineering; B.B.A. (Dual Degree)

Seoul, Korea

- Thesis: Improving Natural Language Reading Performance with Extended Skim-RNNs

## WORK EXPERIENCE

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### Samsung Research, Samsung Electronics

Jul 2018 – Jul 2021

Software Engineer at Neural Machine Translation Team, Natural Language Processing Lab

Seoul, Korea

- **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
- **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 service and 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
- **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
- **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 with LAMP (Linux, Apache HTTP, MySQL, PHP) stack; Used in 1,731 police offices in South Korea
- **Mobile Statute Book:** Developed a statute book Android application with Java for police using the Korean Ministry of Justice APIs; Downloaded 100+ times and rated 4.5+

## PROJECTS

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- **Offloading Convolution Kernel to FPGA:** Offloaded tiled convolution kernel to FPGAs with 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 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

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

## SKILLS

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- **Programming Language:** Python, C++, Java, Javascript, SQL, PHP
- **Other:** Linux, Git, Docker / Node.js, Apache HTTP, MySQL, HTML, CSS, Android / TensorFlow, PyTorch / OpenCL