

work experience

Oct 2017–until now **Machine Learning Engineer** at HyperConnect Seoul

▶ Face Synthesis

- > Real-time face generation and facial expression transfer on mobile device.
- > Few-shot face image generation using style attention, feature warping and landmark transformer.

Python, PyTorch, Tensorflow, CoreML, Swift

▶ Low-bit Neural Networks

- > Researched and implemented various binarization schemes for single and multi-task classification.
- > Implemented conversion tool from PyTorch graph to custom model format.
- > Developed and optimized inference engine for mobile devices.

Python, PyTorch, C++, SIMD, Android Java

▶ 8-bit Quantized Neural Networks

- > 8-bit quantized model for Image Classification and Semantic Image Segmentation in [Azar](#).
- > Optimization of Tensorflow Lite for inference of Semantic Image Segmentation model.
- > Multi-label Image Classification in [Picai](#) - Smart AI Camera.
- > 2nd place at [Low Power Image Recognition Challenge](#) at 2018.

Python, C++, Tensorflow, Tensorflow Lite, SIMD, Android Java, Swift

Dec 2016–Sep 2017 **Assistant Research Engineer** at Hanyang Information & Communications Co., Ltd. Seoul

- > Researched Object Detection networks and their application on NVIDIA Tegra (TK1, TX1 and TX2).
- > Integrated Computer Vision modules (Lane Detection, Vehicle Detection, Tracking, Object Detection and Object Distance Estimation).
- > Represented company at CeBIT 2017 exhibition.
- > Lead of annotation project for Object Detection (plan for data collection, modification of online annotation tool, work assignment).

C++, Python, Caffe, Tensorflow, OpenCV

Jul 2015–Sep 2016 **Machine Learning Engineer** at Company 100, Inc. Seoul

- > Researched and implemented algorithms for Object Detection and Semantic Image Segmentation.
- > Improved fashion recommendation engine for incorrectly segmented parts of clothes.
- > Created prototype for detection and segmentation of clothes using Convolutional Neural Networks.
- > Created hybrid mobile application and server for communication between mobile application and recommendation engine.
- > Helped to determine project direction. Responsible for all parts of codebase.

Python, Caffe, C/C++, Matlab

Sep 2014–May 2015 **Junior Researcher** at Certicon a.s. Prague

▶ Project of Content Based Image Retrieval

- > Implemented video cut detection.
- > Developed a real-time detection and segmentation of paintings in video.
- > Clustered similar paintings and enhanced image quality using super-resolution algorithm.

▶ Project of Electronic Waste Recognition from Point Cloud

- > Developed a recognition method for different computer monitors and TV models.

C++, Python, OpenCV

research

Mar 2019 Temporal Convolution for Real-time Keyword Spotting on Mobile Devices, [arxiv](#), INTERSPEECH 2019

Oct 2018 Towards Real-Time Automatic Portrait Matting on Mobile Devices, [arxiv](#)

education

Sep 2012–Jun 2015 Master's degree from [Czech Technical University in Prague](#), Knowledge Engineering

- > Thesis [Parking Assistant Using Web Cameras](#)

Sep 2009–Jun 2012 Bachelor's degree from [University of Technology in Brno](#), Information Technology

- > Thesis [Face Recognition](#)