

work experience

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

Seoul

- ▶ Accelerate Video Action Recognition On Mobile Device By Exploiting VP8 Data Format
- ▶ 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.

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

Nov 2019 MarioNETte: Few-shot Face Reenactment Preserving Identity of Unseen Targets, [arxiv](#), AAAI 2020

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**