# Benedek Hegedus

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https://www.linkedin.com/in/benedek-hegedus

Portfolio: https://www.benihegedus.com

Languages**: Python, C++, Assembly, SysVerilog**

Research interests**: Active Inference, Spectral Graph Theory**

## EDUCATION

**The University of British Columbia** Vancouver, BC

Bachelor of Applied Science in Integrated Engineering *Sep* 2016 – Dec 2021

Specialized in Computer and Electrical Engineering

## EXPERIENCE

**Huawei Technologies** Vancouver, Canada

*Machine Learning Engineer – Self driving* ***Python, C++*** Jan 2022 – Jan 2023

- Converted models from PyTorch to run on specialized AI accelerator hardware.
- Optimized models and operators to utilize AI hardware to the fullest, resulting in massive reduction in inference time.
- Co-designed SOTA network architectures that are optimized for utilizing AI accelerator hardware.
- Worked across the whole self-driving AI stack, integrating and optimizing modules, operators, etc
- Developed scripts and tools to automate model conversion, evaluation and analysis steps, significantly increasing robustness and productivity.
- Conducted competitor analysis in self driving space to evaluate different technical directions, future trends and provide valuable insights to the team.

**Huawei Technologies** Vancouver, Canada

*AI researcher Co-op in Computer Vision* ***(Python, C++, Linux)*** Jan 2020 – September 2020

- Convert models from TensorFlow and PyTorch to run on Atlas200DK board by using equivalent models with different operators. Models include OpenPose based keypoint detection and Transformer based language model.
- Create Hand Gesture Controlled RC Car open source project to showcase hardware connections with Atlas200DK.
- Pipeline multiple deep learning models to implemented embedded version of computer vision application.
- Review SOTA research papers in Computer Vision and AI to understand trends in model architectures.
- Implement Python based Atlas200DK projects in C++ to optimize inference, pre-processing and post-processing time.

**Laser Zentrum Hannover e.V** Hannover, Germany

*Machine learning* ***(Python)*** *– intern* May 2019 – Dec 2019

- Built a dynamic data acquisition and camera calibration program that fully automated the data collection process. This was a significant improvement as the data was previously collected manually.
- Integrated the data acquisition system with a live post-processing algorithm. This reduced the size of saved frames from 4mb to 2kb while maintaining useful information.
- Pre-processed different types of data to be ready for ML classification using NumPy and Torch.
- Used PyTorch and Keras to create neural networks for classification.
- Implemented a custom Recurrent-CNN in PyTorch (for video classification) and achieved a classification accuracy (4 classes) of 77%. The previous best was 37%.