Martin Christiaan van Leeuwen

Machine Learning Engineer

Enthusiastic machine learning engineer with two years of experience working in the fields of electro-optical communication and computer vision. Capable of developing efficient deep learning solutions as well as the necessary infrastructure in the latest frameworks. I am looking for a position where I can use my development skills to drive the development of impactful applications and products.

martinvanleeuwen95@gmail.com | 06-83387594 | Houten, Utrecht | github.com/MartinChristiaan

EDUCATION

B.S. Electrical Engineering
Eindhoven University of Technology

09/2014 - 09/2018

M.S. Electrical Engineering
Eindhoven University of Technology

09/2018 - Present

WORK EXPERIENCE

Deep Learning Research Intern
V-Silicon

11/2019 - Present *Fremont,California*

Television SoC manufacturer

Achievements/Tasks

- Explored opportunities for neuro-symbolic AI in frame rate upconversion systems.
- Combined traditional computer vision algorithms with convolutional neural networks to design a robust frame rate upconversion system.
- Proposed an unconventional yet effective method to circumvent the need for ground truth training data based on procedural generation.

Contact: Erwin Bellers - Erwin_Bellers@v-silicon.com

Embedded Software Engineer
TNO

07/2019 - 10/2019 *The Hague, The Netherlands*

Research facility

Achievements/Tasks

- Researched the Viability of the Edge AI framework for experimental Deep Learning on FPGAs.
- Implemented the YOLO-V3 network, capable of detecting various types of objects within images, on an FPGA.
- Investigated memory and compute bottlenecks within the Edge AI implementation using the roofline model.

Student Research Assistant
Electro-Optical Communications Group (Eindhoven University of Technology)

09/2017 - 08/2018 *Eindhoven, The Netherlands*

Achievements/Tasks

- Explored methods to improve the signal processing chain for optical fiber communication systems.
- Created prototypes of various filtering methods to explore trade-offs between robustness and complexity.
- Implemented the MIMO, a crucial self-learing filter within the optical fiber processing system on a GPU using CUDA.

SKILLS

Python | Pytorch | Tensorflow/Keras | CUDA | C/C++ | C#/Java | Linux | Deep Learning | SQL | Computer Vision | Signal Processing | Git | Matlab | Unity | Docker

PERSONAL PROJECTS

Video Heartbeat Monitors
- Created an application capable of constructing a heartbeat signal based on facial color variation caused by blood circulation.

Procedural Guitar Hero
- Leveraged the Librosa audio analysis library to create a game that allows players to play along to any of their favorite songs.

Real-Time GPU Procedural Terrain Generation
- Created a system based on hierarchical Perlin noise to generate believable terrains in a controllable way.
- By employing GPU acceleration with compute shaders, the system was able to perform in real-time. This allowed users to see their changes instantly, even for larger terrains.