Carl Johnell

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About

Currently in my final year as an MSc student in Computer Science at Chalmers. Previously software developer for 2.5 years after having completed a BSc in Software Engineering at BTH.

Education

MSc in Computer Science 2018 -
Chalmers University of Technology

Average grade 4.5 / 5.0.

A selection of courses include Advanced Algorithms, Computer Vision, Machine Learning, Deep Learning, and Optimization.

BSc in Software Engineering 2012 - 2015
Blekinge Institute of Technology (BTH)

Professional Experience

Summer Internship Jun - Aug 2019
Qualisys Gothenburg

Qualisys develops motion capture solutions based on optical tracking of reflective markers. I used C++, Python, Unity, and applied quaternions and linear algebra concepts during the development of three new projects:

- Open source Lab Streaming Layer (LSL) Python application that can stream marker and rigid body positions as LSL data. The app was added as a submodule to the official LSL git repository. See github.com/qualisys/qualisys_lsl_app and github.com/sccn/labstreaminglayer.
- Unity project for synthetic data generation, analogous to github.com/openai/orrb, used to train deep neural networks for keypoint detection from raw images.
- OpenVR driver that makes it possible to override the default tracking system of HTC Vive VR headset with Qualisys' motion capture system. See github.com/ValveSoftware/openvr.

Contracted Student Jan - May 2019
Fraunhofer-Chalmers Centre for Industrial Mathematics (FCC) Gothenburg

Spent half a day a week at FCC to assist with minor tasks on an in-house project.

Software Developer Aug 2015 - Jan 2018
Compuverde (acquired by Pure Storage) Karlskrona

Designed, implemented & improved several features in the Software Defined Storage (SDS) product. Main development was in C++ and various test and utility scripts were in Python. I learned a lot about storage, virtualization, multitude of different networking protocols, multithreading, server programming, and more.

Some of my contributions:

- Worked on the server implementation of several different networking protocols: Kerberos, LDAP, NFS, NNTP, NTLM, RPCSEC_GSS.
- Implemented an Amazon S3 server compatible with a subset of the official API.
- Created a plugin for OpenStack Block Storage (Cinder) in Python.
- Developed a REST API for easier management and administration of a storage cluster.
- Implemented dynamic configuration of VLANs and routing tables in Linux, which allowed for better network traffic isolation in multi-tenant setups and between the control and data planes.
- Improved the main build script which reduced the time of incremental debug builds by 90%.

Summer Internship Jun - Aug 2015
Ericsson Karlskrona

In a group, developed an internal tool used to compose and visualize different use cases supported by Ericsson Charging System. The tool was a web application and I was the main developer of the backend-side in Java.

Software Developer Jun - Dec 2014
Malvacom Karlskrona

Part-time work during studies. Android development and Python web development.

Skills

Programming languages: C, C++, Go, Java, Python
Technologies: CMake, Docker, Git, LLVM, PyTorch

Personal Projects

Dingo, github.com/cjo5/dingo

Compiler for a C-like programming language with easy interop from and to C. Written in Go.