

Curriculum Vitae

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Employment History

- **Bloomberg Financial Data Systems Inc., Systems Security Group**
Advanced Hardware/Software Engineer **November 2010 to Present**

Responsible for the design and development of a hardware platform for dealing with high-throughput data processing for financial data that has been encrypted using FIPS-197. Developed software support for Linux to deal with Intel Trusted Execution Technology for establishing a chain of trust in an untrusted computing environment.

- **ABC Company, Technology and Delivery Group**
Technical Lead, Core Technologies Group **April 2007 to November 2010**

Responsible for the design and development of the core technologies that ABC uses in developing high-speed workflows for processing of geospatial imaging data. Conducted research into new techniques and emerging technologies to improve performance of applications in production environments.

- **Contractor for Various Clients**
Geospatial Software Developer **December 2006 to April 2007**

Developed file I/O support for Synthetic Aperture Radar imagery in the Geospatial Data Abstraction Library (GDAL) open source library for ESRI. Worked on various minor projects involving Synthetic Aperture Radar imagery processing.

- **Nortel Networks, Carrier Networks Group**
Developer **April 2006 to December 2006**

Developed layer three traffic management software for ATM and Frame Relay products, leveraging both legacy fixed-function packet processing hardware and next-generation Network Processing Units.

Volunteer Activities

- **EngSoc Project, Carleton University**
Volunteer Administrator **September 2004 to Present**

Manage a rack of several servers, overseeing day-to-day operations. Responsible for provisioning new services that are requested by users. Responsible for dealing with funding proposals to purchase new equipment and infrastructure.

- **Geospatial Data Abstraction Library (GDAL)**
Project Developer and SAR Format Maintainer **March 2007 to Present**

Maintain and enhance support for Synthetic Aperture Radar formats. Maintain and modernize data-fetch code to improve compiler optimization opportunities.

Education

- **Bachelor of Computer Science, Software and Computing, Minor in Mathematics.**
Incomplete, fourth-year standing, Carleton University, Ottawa 2004 to Present

Technical Skills

- **Software Skills**

Expert level proficiency in C, C++, assembly (x86, MIPS), strong Java knowledge
Significant experience with image processing algorithms
Strong background in embedded design, especially in the context of telecomm
Significant experience with Linux Kernel internals; some knowledge of Windows NT internals, especially WDM/WDF
Knowledge of USB and PCI-related standards from a programming perspective

- **Hardware Skills**

Strong understanding of microprocessor architecture
Experienced in debugging hardware during bring-up and for reverse engineering
Knowledge of Verilog for logic design

- **Reverse Engineering**

Significant experience in reverse engineering hardware and software
Ported Linux kernel to several Cisco routers, including developing a bootloader
Developed userspace tools for communicating with TeraRecon VolumePro 1000 volumetric rendering hardware (ongoing)
Reverse engineered a number of proprietary imagery formats for geospatial data storage

- **Other Skills**

Strong mathematics knowledge, focusing on applications in digital signal processing and image compression
Significant project management experience
Strong public speaker

References Available Upon Request