Jesse Haber-Kucharsky

http://haberkucharsky.com

Summary

- Substantial experience developing software and executing projects across varied domains including robotics, distributed systems, and embedded platforms

- Enthusiastic about building modular and composable systems and libraries with a focus on correctness, simplicity, and testability

- Adept at applying and understanding mathematical tools from fields like machine learning, optimization, and statistics to solve engineering problems

- Clear communicator dedicated to effective collaboration and growing strong, supportive teams

- Modern C++, C, Scala, OCaml, Haskell, Python

Professional Experience

ScyllaDB
Software Engineer
Remote
May 2017 – Present

Scylla is an open-source and high-performance drop-in replacement for Cassandra written in modern C++. Scylla is built on Seastar, an open-source concurrency framework.

Uber Advanced Technologies Center
Software Development Engineer
Pittsburgh, PA, USA
Feb. 2016 – May 2017

Built and strengthened the core software platform powering self-driving cars on public roads and enabling off-line simulation and analysis, while working closely with robotics experts. C++ and Python.

PagerDuty
Software Developer
Toronto, ON, Canada
Jan. 2015 – Jan. 2016

Designed and built a new system in Scala with Akka for dynamically applying probabilistically generated load to the incident management pipeline in order to assess end-to-end bottlenecks and resource needs.

Microsoft Research
Research Intern and Engineer
Redmond, WA, USA
May 2014 – Aug. 2014

Delved deeply into Cosmos internals – an in-production massive-scale system for distributed storage, data processing, and machine learning crucial for products like Bing – and created tools to analyze its performance characteristics.

Arista Networks
Software Engineer Intern
Santa Clara, CA, USA
Jan. 2012 – May 2012

Wrote a software agent in C++ and hardware simulation in Python responsible for monitoring, controlling, and programming the fan hardware for a next-generation network switch.

BlackBerry
Embedded Systems Intern
Acoustic Systems Intern
Waterloo, ON, Canada
May 2011 – Aug. 2011
Sept. 2010 – Dec. 2010

Developed operating system drivers for Near Field Communication (NFC) on BlackBerry devices. C and C++ on a POSIX-like system.

Researched and developed a hidden Markov model in Matlab for simulating and applying impairments in VoIP networks and measuring the impact on audio quality.

EDUCATION

Carnegie Mellon University
Master of Science (MS)
Electrical & Computer Engineering
Pittsburgh, PA, USA
Aug. 2013 – Dec. 2014

Admitted as a PhD student with a focus on large-scale software systems for machine learning and data processing. Transitioned to an MS degree based on refined goals.

- Storage systems: developed integrity checker for ext2 in C and a cloud-backed file-system with FUSE in C++
- Performance modeling of computer systems with queuing theory
- PhD-level machine learning, including a team project to design a classifier for songbird species comparing SVM and k-NN
- Readings and research in advanced and distributed operating systems
- Distributed embedded systems

University of Waterloo
Bachelor of Applied Science (BASc)
Distinction and Dean's Honours
Honours Electrical Engineering
Waterloo, ON, Canada
Sept. 2008 – Apr. 2013

Emphasized control and communications theory, digital signal processing, optimization, and artificial intelligence.

Design project: Home power-usage monitoring system with custom wireless hardware modules, firmware, statistical forecasting, and web administration.

AWARDS

Carnegie Mellon University	Aug. 2013 – May 2014	Frank J. Marshall Graduate Fellowship
NSERC (Government of Canada)	Aug. 2013 – Aug. 2014	Postgraduate Scholarship Master's Award
	Aug. 2013 – Dec. 2012	Undergraduate Student Research Award
University of Waterloo	Jun. 2013	Sandford Fleming Foundation Co-op Proficiency Award
	Mar. 2013	Infusion Cup for best design project of 71 teams

INTERESTS

Cooking and food, classical music and jazz, hiking and cycling, programming languages, functional programming, formal methods, and mathematics.