Mark Armstrong

Software Engineer, M.Sc. Computer Science

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Employment

Software Engineer — Index Exchange, Toronto ON, Sept 2021 - Sept 2024

- Worked on the core application API team, developing APIs in Go.
  - Focus on user/account management, authentication and authorization.
  - Incorporated technologies including Ansible and Redis.
- Practiced DevOps using Docker, Kubernetes, Helm, GitLab CI/CD and ArgoCD.

Sessional faculty — McMaster University, Hamilton ON, 2013 - Dec 2020

- 5 appointments for teaching "Principles of Programming Languages".
- Planned and prepared lecture materials and assignments/tests including both written and programming evaluations.
- Supervised teaching assistants.

Teaching assistant — McMaster University, Hamilton ON, 2013 - Apr 2021

- 15 appointments, primarily to courses on programming language theory and discrete mathematics.
- Prepared and led tutorial sessions and office hours, marked student work.
- In some instances, appointed to supervise other teaching assistants.

Research assistant — McMaster University, Hamilton ON, Summers 2010 and 2012

- Independently researched on topics selected by supervising professors.

Embedded Systems Test Dev, Intern Blackberry, Missisauga ON, May 2011 - Aug 2012

- Developed automated tests and test systems for Blackberry GPS systems.

Education

Ph.D. in Computer Science (inc) — McMaster University, Hamilton ON, 2015 - 2022

- Coursework and comprehensive exams completed. Thesis not completed.
- Mechanising models of computability using automated proof assistants.
- 3rd place in 2019 McMaster Computing and Software poster competition.
- GPA: 11.75 on 12 point scale.

M.Sc. in Computer Science — McMaster University, Hamilton ON, 2013 - 2015

- Investigated classical computability results in context of computability over real numbers.
- GPA: 11.75 on 12 point scale. Graduated with distinction.

B.A.Sc. in Computer Science — McMaster University, Hamilton ON, 2008 - 2013

- Summer 2010 research project on (theoretical) models of concurrency.
- Summer 2013 research project on mechanising mathematical knowledge.
- GPA: 11.1 on 12 point scale. Graduated with distinction.

Objectives

- Put my backend, DevOps experience and programming language theory knowledge to use building interesting, meaningful software.
- Work with excellent people, in a culture fostering learning, teaching and growth.
- Learn new languages, tools, and patterns.
- Take opportunities, either professional or personal, to contribute back to open source projects.

Skills

Programming

- **Expert** Go, Agda, Emacs lisp
- **Experienced** C, Python, Shell script
- **Familiar** Typescript, Elm, Haskell, SML, Ruby, Scala

Other software proficiencies

Docker, LXD, Kubernetes, Helm, GitLab CI/CD, ArgoCD, Ansible, Redis, Keycloak, Linux, Emacs, Org mode, LaTeX

Soft skills

- Teaching and mentoring
- Literate programming
- Mental health support

Teachables

- Principles of programming languages/programming language design
- Discrete math and logic
- Theory of computation
- Software specification and correctness
- Functional programming

Publications

- Armstrong, Mark & Zucker, Jeffery, Notions of semicomputability in topological algebras over the reals, Computability, vol. 8, no. 1, pp. 1-26, 2019

Awards

Graduate studies scholarships and fellowships

Name	Years held	Value
NSERC Postgraduate Scholarship, Doctoral	2017 - 2019	$42,000
Ontario Graduate Fellowship	2016 - 2017	$12,000
Dean's Excellence Engineering Doctoral Award	2015 - 2018	$127,500[1]
NSERC Canadian Graduate Scholarship, Masters	2014 - 2015	$17,500
Ontario Graduate Scholarship	2013 - 2014	$15,000

1. Included guaranteed teaching assistant employment income for those years.

Other

Name	Date	Value	Description
Gerald L. Keech Medal	2013	——	For highest graduating GPA in program that year.
Ruth and Jack Hall Prize	2011	$225	For highest 3rd year GPA in program.
Dr. Harry Lyman Hooker Scholarship	2011	$1500	For academic excellence.
Createch Scholarship	2010	$1000	For highest 2nd year GPA in program.
Nortel Networks Scholarship	2009	$1000	For academic excellence.
McMaster entry scholarship	2008	$2000	

Extracurricular

- Maintaining my setup/configs for Emacs and other tools (`https://github.com/armkeh/dotfiles`), to build a collection of well-documented tips and tricks.
- Represented McMaster Computing and Software at the Ontario Universities Fair in 2015 and 2016.
- Church secretary, board member, music and youth leader, and kids programming volunteer at Hamilton Mountain Church of the Nazarene, 2007-2015.

This document available in multiple formats from `https://github.com/armkeh/resume/`.