

Alexander Schaap



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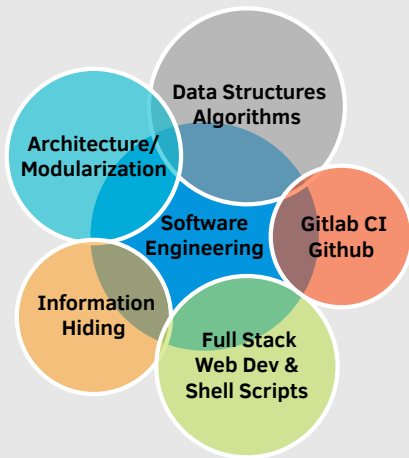


/in/alexanderschaap



aschaap

Skills



Programming

OCaml • Linux • \LaTeX

Java • Lua • Git

Haskell • C & C++ • JS

Projects

From Trash to Treasure Identified e-waste reuse opportunity, and consulted on pilot for refurbishing PCs for children in need within the community and students; diverted over 1000 kg and donated 70 systems.

- Climate Change and Health — Innovation Award (\$5000)

Homelab Maintaining personal OPNsense router, network boot server, and file server (using the Zettabyte File System).

Hackathon Project Group ideated and created website in Ruby and JS to connect restaurants for donating excess food and people in need.

- 3rd prize at DeltaHacks II (out of over 350 participants)
- W Booth prize (entrepreneurial)

Education

2017 - Now Ph.D., Software Engineering

McMaster University, Canada

Developing program family generators using multi-stage programming and generics in (Meta)OCaml. Variabilities include programming paradigm and sorting algorithms. Focusing on deriving abstract interfaces to provide information hiding w.r.t. paradigm and other design choices.

2014 - 2016 M.A.Sc., Software Engineering

McMaster University, Canada

Researched generating multiple module decompositions in MetaOCaml, Haskell and Java. Initiated investigating paradigm-polymorphic program family generation.

2009 - 2013 B.Sc., Computer Science

University of Twente, the Netherlands

Focused on: Java, Haskell, SQL, networking, and operating systems. Thesis paper categorizes Tor exit-nodes.

Experience

Mar 2014 -
Now

Grad. Research Asst./Research Eng. McMaster CERC in Hybrid Powertrain

Developing hybrid powertrains for Fiat Chrysler Automobiles (FCA):

- Reverse-engineered several large FCA Simulink models
- Led the creation of Simulink model documentation automation
 - Ready-to-use tool on MATLAB Central
- Porting Simulink and C code to new hardware and hypervisor
- Led the migration of legacy automotive control software (Simulink and C) towards compliance with the AUTOSAR 4.2.2 standard
- Supervised undergraduate students (2+ years)

Feb 2013 -
Now

IT Manager (on-demand)

Soltree Sustainable Solutions

Design, develop and maintain website, network, and Linux systems.

Jan 2020 -
Mar 2020

E-Waste Reuse Initiative Student Employee

McMaster UTS, Canada

Spearheaded continuation of the “From Trash to Treasure” project:

- Established collaborative relationships with student organizations
- Planned and presented future direction of project
- Collected, sanitized, repaired e-waste on campus
 - Designed, implemented and documented processes thereto

Jan 2018 -
Apr 2018

Graduate Teaching Assistant (CS 1XA3)

McMaster University, Canada

An introductory course covering core concepts in functional programming and practical programming skills in Bash, Haskell and Elm.

Selected Publications

A. Schaap, G. Marks, V. Pantelic, M. Lawford, G. Selim, A. Wassying, and L. Patcas. “Documenting Simulink Designs of Embedded Systems”. In: *Proc. 21st ACM/IEEE Int. Conf. on Model Driven Engineering Languages and Systems: Companion Proceedings*. 2018.

A. Schaap. “Towards Generating Software Modularizations”. Master’s Thesis. 2016.

A. Schaap. “Characterization of Tor Exit-Nodes”. In: *Proc. 18th Twente Student Conf*. 2013.

Awards

2017,’18,’20 **Ontario Graduate Scholarship** (\$15,000 each year)

Community Involvement

2016 - 2017 Life in Computing & Software (LiCS)

McMaster University

Co-founder & VP Tech of the first graduate student club to improve student life in the CAS department.