

# Alexander Schaap

## Research Assistant



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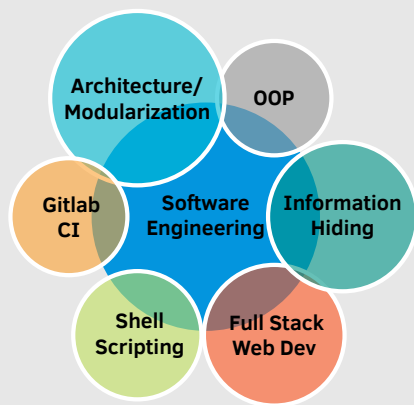


/in/alexanderschaap



aschaap

## Skills



## Programming

*Knowledge of*

*Skilled in*

OCaml • Linux •  $\LaTeX$

Java • Lua • Git

Haskell • C++ • JS

## Projects

**Self-hosting** OPNsense router, netboot server, and Debian home server on ZFS for backups via BorgBackup, synchronization via Syncthing and task management via KanBoard.

**Dana** Website in Ruby and JS to connect restaurants and charities for donating excess food (in return for advertising), and consumers for deals in said restaurants

- 3rd prize at DeltaHacks II
- W Booth Prize for most innovative or entrepreneurial idea

**Rehistoric** Simple GUI revision control for the uninitiated, written in C++ and Qt.

## Education

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

McMaster University, Canada

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

2009 - 2013 **B.Sc., Computer Science**

University of Twente, the Netherlands

Thesis paper investigated Tor exit-nodes. Courses included Java & Haskell, SQL databases, networking, etc. Minored in Chinese language & culture.

## Experience

Jan 2017 - **Graduate Research Assistant**

McMaster CERC in Hybrid Powertrain

Now

Resumed position in collaboration between McMaster University and Fiat Chrysler Automobiles (FCA):

- Researching and partaking in modification of automotive control software (C/Simulink) to domain-controller hardware architecture.
- Researched migration of legacy automotive control software (Simulink) towards compliance with the AUTomotive Open Software Architecture (AUTOSAR) standard, in part via dSPACE SystemDesk.
  - Included largely independent supervision of multiple undergraduate students for a combined 12 months.

Jan 2018 - **Graduate Teaching Assistant**

McMaster University, Canada

Apr 2018

Answered technical questions for introductory Bash, Haskell and Elm.

Oct 2016 - **Research Engineer**

McMaster CERC in Hybrid Powertrain

Dec 2016

Finalized documentation automation effort from Grad. Research Asst.

Mar 2014 - **Graduate Research Assistant**

McMaster CERC in Hybrid Powertrain

Aug 2016

Part of a large multidisciplinary project between McMaster University and Fiat Chrysler Automobiles (FCA) to develop hybrid powertrains:

- Worked with domain experts to reverse-engineer, document and analyze several large FCA Simulink models.
- Directed and took part in the creation of a process and accompanying templates for automated documentation of Simulink models.
  - Included the supervision of an undergraduate student for 16 months with minimal intervention of supervisors.

Feb 2013 - **IT Manager (part-time)**

Soltree Sustainable Solutions

Dec 2013

Designed/maintained website, network, and Linux systems.

Sep 2012 - **Undergraduate Teaching Assistant**

University of Twente, the Netherlands

Oct 2012

Guiding students through SQL query construction lab assignments and verifying solutions for a second-year databases course

## Awards

2017,  
2018

**Ontario Graduate Scholarship (OGS)**

McMaster University, Canada

Awarded \$15,000 both years.

## Service & Outreach

2016 -  
2017

**Life in Computing & Software (LiCS)**

McMaster University

Co-founder & VP-Technology of the first graduate student club in the Computing & Software department. Responsible for creating/maintaining website and assisting in event organization.

2015 -  
2019

**E-Sustainability Initiative**

McMaster University

Individually collected and repaired e-waste for friends and acquaintances; collaborating with McMaster's Academic Sustainability Programs Office on course project and a student-run reuse organization.