Thomas Schweizer

Seattle, WA · thms.sch@gmail.com · thomsch.github.io
github.com/thomsch · linkedin.com/in/tschweizer

Education

Ph.D. in Computer Science. Current
University of Washington, United States

M.Sc. in Computer Science. 2018 - 2020
Université de Montréal, Canada

B.Sc. in Computer Science. Major: Software Engineering 2011 - 2014
Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud, Switzerland

Experience

Research Software Developer. Mila - Quebec Artificial Intelligence Institute 2020

- Developed a machine learning hyper-parameter optimizer used by top ML researchers and students.
- Researched and designed hyper-parameter visualization features in collaboration with IBM research.
- Improved productivity and coordination for our team of 10 developers by establishing formal management and tracking tools for software projects.

Software Engineer. Digger Foundation 2014 - 2019

- Designed and built the back-end software and the Android app of the SMART system used by countries and NGOs to safely remove landmines around the world.
- Enforced systematic testing for critical software components by introducing an integrated workflow platform and establishing practical software development guidelines for the company.

Teaching Assistant for 'Advanced Java', and 'Software Engineering'. Université de Montréal 2018 - 2019

Publications and Presentations

T.Schweizer, V. Zafeiris, M. Fokaefs and M. Famelis, "Can Refactorings Indicate Design Tradeoffs?," 2020 IEEE 20th International Working Conference on Source Code Analysis and Manipulation (SCAM), Adelaide, Australia, 2020.

T. Schweizer, advised by M. Famelis, "Towards Using Fluctuations in Internal Quality Metrics to Find Design Intents," Master Thesis, Université de Montréal, Montreal, Canada, 2020.

T. Schweizer, V. Zafeiris, M. Fokaefs and M. Famelis, "Finding Quality Tradeoffs in Revision Histories," Poster session and talk at MiSE 2020, CSER 2020, and CSCAN-SPAC, Montreal, Canada, 2019.

T. Schweizer, "Applying Software Engineering Principles to a Machine Learning Algorithm: Lessons Learned," Poster session at Software Engineering for Machine Learning Applications (SEMLA), Montreal, Canada, 2018.

Relevant Skills

Topics:	Software Engineering, Data Science, Machine Learning, Natural Language Processing, Databases
Languages:	Java, Python, HTML/CSS/JavaScript, Scala, SQL, R, C#

Selected Projects

Metric History, Université de Montréal: Built a dataset of software metric changes in source code from 13 projects over 107,449 commits by building an static-analyzer agnostic tool to mine source code across version history.

Detecting Design Principles, Université de Montréal: Built a machine learning model that detects the application of SOLID design principles from metric changes in source code with an F1 of 66.4%.

Lemma to word, Université de Montréal: As a team of 2, built a Hidden Markov Model that convert lemmatized sentences to their original form.

Pause, Personal project: Healthy productivity companion built on Electron (HTML/CSS/Javascript/NodeJS).

Stargazers, Université de Montréal: Led a team of 4 to build and compare machine learning models that detect new exoplanets from NASA's Kepler dataset with an average accuracy of 97%.

Evolution et vie artificielles, HEIG-VD: Conducted controlled experiments to understand the genetic evolution of populations of digital organisms and their behaviors by developing a genetic library in C# and a 3D physic-bound simulation environment in Unity.

Awards and Achievements

University of Washington (GPA 4.0)
Allen School Computer Science & Engineering Research Fellowship 2020

Université de Montréal (GPA 4.0)
Bourse de rédaction DIRO: Departmental scholarship for thesis redaction 2019
Bourse d'excellence FESP: Graduate and post-doctoral studies faculty scholarship for academic excellence 2019
Bourse de fin de maîtrise: Graduate and post-doctoral studies faculty scholarship for thesis redaction 2019
Bourse d'excellence DIRO: Departmental scholarship for academic excellence 2019
Bourse d'excellence DIRO: Departmental scholarship for academic excellence 2018
Bourse d'excellence FESP: Graduate and post-doctoral studies faculty scholarship for academic excellence 2018
Bourse C: Scholarship of excellence for international students 2018

Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud (Grade A, Class rank 1)
Prix HEIG-VD : Best overall results during all semesters and final project 2014
Prix GiTi : Excellent bachelor project "*Evolution et vie artificielles*" 2014

Swiss Summer University Program at San Jose State University
Best overall grades among 40 international students in the program 2013

GPA (out of 4.0) is calculated from `https://applications.wes.org/igpa-calculator/`.