



Johan Herland

SOFTWARE ENGINEER · GIT EXPERT

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“Move slow and mend things.”

Summary

- Passion for designing and implementing elegant and useful software solutions to challenging problems.
- Always looking for root causes and more fundamental solutions, rather than superficial patches and fixing symptoms.
- Experience in distributed software development with Git, and Python/C/C++ programming from Cisco, Opera and open source projects.
- Good knowledge of the full software stack, with experience from all levels:
 - low-level embedded Linux work,
 - build systems and test infrastructure for applications as well as H/W device systems,
 - administering servers and services,
 - working with web standards, both as a web browser developer, and a web developer.
- Excellent communication skills from studying abroad and working in multilingual environments.

Work Experience

Tweag

DEVELOPER PRODUCTIVITY ENGINEER

Delft, NL/Remote

September 2022 – Present

- Developer Productivity Engineer focusing on improving the software developer experience with tools such as Nix and Bazel.

Cisco Systems Norway AS

SOFTWARE ENGINEER

Oslo, NO

October 2011 – September 2022

- Platform developer in the Webex Devices team, part of the Collaboration Technology Group.
- Development of multiple generations of Webex/TelePresence video conferencing endpoints.
- Embedded Linux development, integration of open-source and 3rd-party components.
- Maintenance of build systems for application development towards various custom H/W platforms.
- Git expert: trained developers and administered in-house Git infrastructure.
- Improved the developer experience in a large and complex codebase (decades of development, various custom hardware support, actively developed by hundreds of developers across many timezones).

Git project

CONTRIBUTOR

Online

May 2007 – November 2014

- Primary author of the *git notes* feature for attaching useful metadata to Git objects.
- Active participant in the Git community.

Opera Software ASA

CORE DEVELOPER

Oslo, NO

July 2004 – September 2011

- Responsible for central infrastructure and utilities, making them lightweight, efficient, and portable to a wide variety of platforms.
- Maintainer of legacy encoding support, Unicode functionality, selftest infrastructure, etc.
- Championed and implemented company-wide version control transition from CVS to Git.
- Unix developer until September 2007: Developed and ported Opera to embedded Unix/Linux-based platforms.

Relevant Skills

Natural Languages

Native Norwegian. Full professional English. Elementary Dutch. Elementary German.

Programming Languages

Python, C, C++, Bourne/POSIX shell, Nix, Haskell.

Other Languages

HTML, CSS, JSON, XML, SQL, \LaTeX , etc.

Methodologies/Practices

Test-driven Development, Agile Development, Design Patterns.

Operating Systems

Linux/UNIX user since 1996. NixOS, Arch, CentOS, Ubuntu, Debian, Gentoo, LFS, etc.

Embedded Development

Embedded Linux development with and without Android, cross-compilation of own and 3rd-party software.

Systems development

How a modern Linux system is put together, systemd configuration, Filesystem Hierarchy Standard, etc.

Containers/Virtualization

Knowledge of Linux namespaces and isolation primitives, Some experience with Docker/Podman and QEMU.

Security

Low-level security features like Seccomp, SELinux, Linux Capabilities, ASLR, RELRO, stack protection, etc.

Public Speaking

2018	The Git Parable , NDC TechTown	Kongsberg, NO
2018	Building useful project utils in Python , NDC TechTown	Kongsberg, NO
2017	Making a Headless Android Device (with Patricia Aas) , NDC TechTown	Kongsberg, NO
2016	Elegant Filesystem Interactions in Python using pathlib , ACCU Conference	Bristol, UK
2013	The Git Parable , ACCU	Bristol, UK
2012	The Git Parable , Meetup with the local Tekna chapter	Oslo, NO

Attended Trainings

2021	Linux Security and Isolation APIs , Michael Kerrisk	Online/Remote
2020	SELinux Administration , Ralf Spennberg	Online/Remote
2019	Fast Track to OpenEmbedded and Yocto Project , Chris Simmonds	Kongsberg, NO
2019	Secure Coding in C and C++ , Olve Maudal	Oslo, NO
2018	Intermediate Python , Robert Smallshire	Kongsberg, NO
2016	Building and Using Shared Libraries on Linux , Michael Kerrisk	Oslo, NO
2016	Linux/UNIX System Programming , Michael Kerrisk	Oslo, NO
2015	Python Advanced , Kevlin Henney	Oslo, NO
2015	Python Foundation , Kevlin Henney	Oslo, NO

Education

Queen's University

Kingston, Ontario, CA

BACHELOR OF SCIENCE WITH FIRST CLASS HONOURS

2000 – 2004

- Computer Engineering, Software Option.
- Received Dean's Award (above 80% grade average) in 2002 and 2003. Final standing: 84% grade average.
- Focus on software architecture, software development and real-time systems.
- 4-year intensive program with a final-year thesis project: *Robot Pool "Straight-Shot" Planner and Executor*:
 - Part of a larger research project in robotics and machine vision on creating a pool-playing robot.
 - Developed two calibration processes for Pool Robot in C/C++.
 - Published paper: Robotic pool: an experiment in automatic potting

Other Experience

Herland Software (sole proprietorship)

WEBSITE DEVELOPMENT AND ADMINISTRATION

June 1998 – January 2008

- Administered web and mail services for multiple customers and domains.
- Created web page layout and programming web applications.

Queen's University

Kingston, Ontario, CA

RESEARCH ASSISTANT, DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

April 2003 – August 2003

- Developed software for a research project in robotics and machine vision (Pool Robot).
- Low-level programming in C and higher level programming in C++.

TEACHING ASSISTANT

January 2003 – April 2003

- Assisted undergraduate students on laboratory assignments in a course on Data Structures and Algorithms.

Other Skills

Driver's License Norwegian Class B.

Professional Memberships ACCU, IEEE, NITO

Hobbies – Cycling Road and gravel biking, cyclotourism, sportives, home mechanic.

Hobbies – Music Jazz Piano, music theory, playing various genres in big band and smaller settings.