Yuri Schaeffer

Software Engineer

Profile

Yuri has an analytical mind, enjoys algorithm design and reverse engineering. He has a strong background in Open Source development. The main focus lies on systems programming, network protocols and extents to firmware development.

Contact

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Languages

- Dutch
- English
- German

Interests

- Electronics
- 3D Printing
- 3D Modelling
- Open Source

Projects

CNCD
A gcode streamer with Python async.

ICBIND
I Can't Believe It's Not DNS! Authoritative DNS server for the ESP8266.

🎓 Education

- **MSc System and Network Engineering**
  University of Amsterdam, 2008 – 2010

- **BSc Computer Science**
  University of Amsterdam, 2002 – 2008

- **Papers**
  'Multicast support on the AMS-IX infrastructure', Thesis MSc, 2009
  'Xen VGA Pass-through', Thesis MSc, 2009
  'Multi Scale Voxel Colouring', Thesis BSc 2007

💼 Experience (Freelance)

- **Sr Software Engineer, The Migraine Clinic**, Netherlands. 2023 – present
  Building an EHR (Electronic Health Record) system backend from scratch.
  Python, Django, Rest, Docker, Vecozo, Postgresql, Nginx, Testing.

- **Senior Software Engineer, Tuxera**, Finland. 2022 – 2023
  Software development on enterprise grade network share product. *Linux, Network protocols, High-availability, Clustering, Git, Agile, Testing, CI/CD.*

- **Senior Embedded Software Engineer, TrueKinetix**, Netherlands. 2022
  Firmware development for embedded platform. *Embedded Linux, SBC, Drivers, Initramfs, U-boot, Scripting and Automation.*

- **Consultant Linux Kernel, Xi Moore Technologies**, Belgium. 2022
  Debugging Linux kernel driver for specialty Infrared camera. *Embedded Linux, Kernel Development, Video4Linux2, Hardware debugging*

💼 Experience

- **Senior Software Engineer, HCS**, Netherlands. 2021 – 2022
  Consultancy specializing in Open Source, Open standards, and Linux in particular. *Embedded Linux, Kernel Development, Video4Linux2, Hardware debugging*

- **Lead Software Engineer R&D, KapiteinLabs/Sonarski**, Netherlands. 2018 – 2021
  Sonarski: R&D LiDAR based 3D SLAM algorithm and physical device. *Linux, C, GTK+, OpenGL, GLSL, Python, Numpy, OpenCV, Parallelism*
  KapiteinLabs: Development of firmware for high speed energy monitor. *Yocto, FreeRTOS, C, Linux Kernel, Hardware, Rapid prototyping.*

- **Software Developer, NLnet Labs**, Netherlands. 2009 – 2018
  R&D Open Standards and Open Source. Development of OpenDNSSEC, NDS and Unbound. IETF involvement. *C/C++, Linux/BSD, Network programming, Public key cryptography, CI/CD, Git, Jira, System Administration.*

- **Teaching Assistant, University of Amsterdam**, Netherlands. 2007 – 2008
  Responsible for lab sessions and grading.
  Computer Vision: 3th year Computer Science course.
  Multimedia: 1st year Computer Science course.
  Natural Language Processing: 2nd year Artificial Intelligence course.

- **Retail, Krytron B.V.**, Netherlands. 2004 – 2007
  Retail computer equipment.

⭐ Skills

- ●●●●● C, Python, Linux, Git, Shell/Bash
- ●●●●○ GDB/Valgrind, Asan/Tsan/UBsan
- ●●●●○ Threading, TCP/UDP/IP, C++
- ●●●○○ OpenGL/GLSL, GTK+
- ●●○○○ FreeRTOS, Rust

✍ Mentoring & Volunteering

- **Mentor student**, Hogeschool van Amsterdam, 2021
  BSc thesis on *'Measuring Point Cloud Quality for Automated Parameter Optimization for SLAM'*.

- **Mentor student**, High school, 2021
  Volunteer math tutoring, pre-university education (VWO) level.

- **Mentor student**, Hogeschool van Amsterdam, 2021
  BSc thesis on *'LiDAR/RGB Sensor Fusion'*.

- **Mentor 4 students**, University of Amsterdam, 2019
  Artificial Intelligence *'Automatic Point Cloud Segmentation'*.

- **Mentor 4 students**, University of Amsterdam, 2019
  Artificial Intelligence *'Detecting and Filtering Moving objects in Point Clouds'*.

- **Mentor student**, Vrije Universiteit Amsterdam, 2019
  Volunteer programming tutoring, Computer Science.

- **Advisory board**, Elementary school, 2016 – 2021.

- **Mentor student**, University of Amsterdam, 2015
  MSc thesis on *'Analysis of DNS Resolver Performance Measurements'*.

- **Mentor student**, University of Amsterdam, 2012
  MSc thesis on *'Resilient OpenDNSSEC'*.

▣ Publications

- **'Flexible and Robust Key Roll-over in DNSSEC'**, SATIN, 2012
  Introducing a formal mathematical definition of a valid DNSSEC state and describe an automated process to transition between 2 arbitrary states.

- **'Hardened Linux AT Keyboard Driver'**, NLUUG, 2010
  Detects and neutralized passive hardware keyboard sniffers by patching the Linux Kernel to inject keystrokes back on the PS/2 interface.

✹ Training & Certificates

- **'Agile & Scrum'**, Finland, 2023

- **'Basic training Emergency Response Officer'**, NIBHV, 2014

- **Training 'Teaching Assistant'**, University of Amsterdam, 2007

🎮 Personal Projects

- **Exploiting mDNS** on the ESP8266. Collected bug bounty.

- **icBIND**, DNS sever on a ESP8266 micro controller using Micro Python.

- **CNCD**, a remote CNC/3D-printer controller supporting multiple concurrent machines. Python, Asyncio.

- **Reverse engineering** of RC remote control serial protocol.

- **Breaking encryption** on network attached energy meter.

- **Open Source contributions** by bug fixes and code improvements. (Wireshark, DIG, CloudCompare, IronOS, ESP8266 IDF, ...)

- **Hacking** an optical mouse to count used sheets of toilet paper.

🔗 References

On request

—— About Yuri ——

Software Engineer, Maker, Tinkerer. My main development is done for and on Unix-like systems with an emphasis on Linux Network programming, performance and correctness. I mostly code in C, Python or shell. I have extensive experience with GDB, Valgrind and static code analyses.
I have a love for Open Source and Open Standards and experience in the standardization process by involvement in the IETF.

—— Hopes & Dreams ——
Someday I hope to land a job where I use the Rust programming language professionally. I think Rust is quite exciting and I love the ideas presented. So far I've only been able to scratch the surface.