

Henrik Tjäder | Curriculum Vitæ

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Experience

Vocational

2017–current **Embedded Systems Engineer**, *Grepit AB*, Luleå

Software development and product prototyping in automotive-, mining- and energy industry
Detailed achievements:

- Embedded firmware and HAL development for automotive low-power applications
 - Microchip atsame51, concurrent RTIC application in Rust: implementing bootloader, extensions to current HAL with CAN, AES, PUKCC, ICM, compile-time verified clocking abstraction
- Embedded Linux system build targeting Xilinx Ultrascale A53
 - Buildroot and Yocto tooling
- Firmware for portable battery driven gem inspection device
 - Written in safe Rust for NXP LPC1347 including user interface, safety shutdown and compliance testing
- Software verification, execution time measurement aided by KLEE symbolic execution
 - ARM Cortex-M4 HIL setup with Python scripted GDB parsing KLEE output
- Sensor operation and collision avoidance system on a STM32F7 mounted on quadcopter
 - Real-time analysis of LIDAR data, collision avoidance done with ultrasonic sensors
- Safety controller for emergency laser shutoff
 - Altera FPGA, VHDL, circuit board verification

2016–2018 **Lab supervisor and Teacher Assistant**, *Luleå University of Technology*, Luleå

Department of Computer Science, Electrical and Space Engineering

- *D0013E - Microcomputer engineering*
Embedded systems, bridge between digital design and assembler, low-level C programming
 - 2018 2017 2016
- *D7020E - Robust and Energy Efficient Real-Time Systems*
System analysis, model of execution, energy consumption
 - 2018, 2017
- *E7020E - Embedded Systems design*
Circuit board design and production, embedded development and prototyping
 - 2018, 2017

2016–2017 **Unix Specialist**, *Koneo AB*, Luleå

R&D at Luleå University of Technology IT Department

Solution design and deployment of Elasticsearch, Graylog, Logstash and Ansible in large scale virtual environment

2013–2016 **Technical support**, *Proffice*, Luleå

Consultant to TeliaSonera AB, Mobile technology support

2013–2013 **Technical Support**, *TeliaSonera AB*, Luleå

First Line support for private and corporate mobile technologies

2011–2012 **Developer**, *EXERI*, Luleå

R&D iOS-app for Object Surveillance

2011–2012 **3D-CAD of buildings, photographer**, *Luleå Kommun Feriejobb, d3Factory*, Luleå

CAD modeling for real-estate agencies

Miscellaneous

2020–current **Core developer**, *Real-Time Interrupt-driven Concurrency (RTIC) project*

2015–2017 **IT-team member**, *STUK*, Luleå

IT operations including networking, payment terminals

2014–2020 **IT Full-stack, operations**, *XP-el Student association*, Luleå
Membership registry, web presence, access card, networking

Master thesis

Title *RTIC - A Zero-Cost Abstraction for Memory Safe Concurrency*

Supervisors Prof. Per Lindgren

Description Extensions to the Real-Time Interrupt-driven Concurrency framework written in Rust for embedded systems

Languages

Swedish Proficient

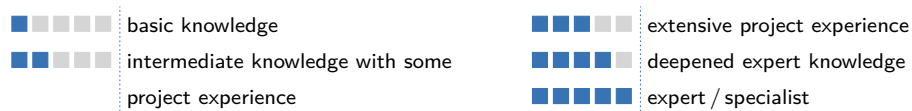
Native

English Proficient

Cambridge Advanced English (CAE) Qualification: Grade A

Experience

Skill matrix



	Level	Skill	Years	Comment
Language:	■■■■■	Rust	5	<i>Embedded systems dev., bootloader, HALs, concurrency framework</i>
Language:	■■■□□	C	4	<i>Embedded systems development</i>
Language:	■■■□□	Python	4	<i>Prototyping algorithms, REST-APIs, Flask</i>
CI tooling	■■■■■	GHA, TravisCI, ZUUL	4	<i>Linting, build verification and delivery. HIL</i>
Version Control	■■■■■	Git, Pijul, SVN	10	<i>With various workflows, Gerrit, branching strategies</i>
Virtual env.	■■■■■	QEMU, LXC, Docker	8	<i>Small to medium virtual environments, cloud and on-premise.</i>
OS:	■■■■■	Linux	15	<i>Desktop, server, virtual and embedded</i>
Methods	■■■■■	SCRUM	6	<i>SAFe, developer roles primarily</i>
Text Analysis	■■■□□	Logstash, Grok, regex, Graylog	4	<i>Statistics, anomaly detection</i>
Databases	■■■□□	Elasticsearch, MySQL/MariaDB, sqlite3, MongoDB	2	<i>Data aggregation, log retention</i>
Markup	■■■■■	LaTeX, Markdown	10	<i>Documentation, presentations, reports</i>

Interests

MTB A perfect way to enjoy nature, one pedal stroke at a time

Snowboarding Surfing on fresh powder is something truly special

Kite surfing Brings snowboarding to a new level and makes those windy days something to enjoy