

Richard Edberg

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Nationality: Swedish

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Current position

2021-2024 *Embedded systems software developer at Ericsson AB, C++/Python/Java. Working with drivers for microchips and have been acting scrum master. Some particular features I work with are:*

- Communications protocols such as GPIO, SPI, SerDes, JESD204, I2C, I3C, CPRI etc.
- Configuration of on-chip data processing.
- ASIC and FPGA chips, register specification and communicate closely with hardware design.
- Radio software and algorithms for temperature, current and voltage control.
- Test loops for continuous integration (CI)

Education

2017-2021 Degree: *Doctor of Philosophy in physics* (PhD), KTH Royal Institute of Technology, Sweden. Research subject: frustrated magnetism, numerical simulations in C++ and sample preparation. Supervisor: prof. Patrik Henelius, KTH Royal Institute of Technology

2016-2017 Degree: *Master in theoretical physics* (M.Sc.) KTH Royal Institute of Technology, Sweden, Theoretical Physics (Thesis at the department of condensed matter theory within the field of superconduction, supervisor: Prof. Egor Babaev, KTH Royal Institute of Technology)

2015 Exchange semester at ETH, Eidgenössische Technische Hochschule, Zürich, Switzerland

2012-2015 Degree: *KTH Royal Institute of Technology, bachelor in engineering physics* (B.E.), Thesis at the department of partial differential equations, Stockholm, Sweden

LANGUAGES

Swedish, mother tongue.

Mandarin, can speak typical everyday conversations.

English, fluent.

German, beginner

Publications

- 2021 “Magnetic monopole relaxation effects probed by modulation calorimetry in small spin ice samples”, in progress. **First author.**
- 2021 “Single crystal growth of pyrochlore titanate oxides ($RE_2Ti_2O_7$) by optical zone melting for neutron and magnetic property studies”, in progress. **Fourth author.**
- 2020 “Emergent magnetic behaviour in the frustrated $Yb_3Ga_5O_{12}$ garnet”, under review, Phys. Rev. B, arXiv:2005.10605, **Second author.**
- 2020 “Effects of uniaxial pressure on the spin ice $Ho_2Ti_2O_7$ ”, Phys. Rev. B 102, 184408. **First author.**
- 2019 “Dipolar spin ice under uniaxial pressure”, Phys. Rev. B 100, 144436. **First author.**
- 2017 “Vortex Currents near the Boundary of a Two-Component Superconductor”, oai:DiVA.org:kth-209923. **Single author.**
- 2015 “Kvasistatisk Spricktillväxt i en Halvcirkelskiva”, oai:DiVA.org:kth-166860. **Single author.**

Coding languages and programs and competences

C++/C

Cuda

MPI

openMP

COMSOL multiphysics

Java

MATLAB

Python

TensorFlow

Yocto

CI/CD agile methods

Linux

Previous Experiences

- 2021-2024 Ericsson AB, C++ Embedded software developer.
- 2017-2021 PhD degree in physics at KTH, Royal Institute of Technology.

- Theory of quantum systems, correlations and magnetism.
- Experimental work with magnetic crystals and neutron scattering.
- C++/Matlab optimized code for fast simulations on Linux based supercomputers.
- International collaboration.

2018-2021	Worked as course assistant at KTH, teaching statistical mechanics on masters level, Sweden.
2017-2019	Worked as course assistant at KTH, teaching quantum mechanics and vector calculus, Sweden.
2017-2021	Played violin in the KTH Royal Institute of Technology orchestra (KTHAK)
2016	Worked at KTH Royal Institute of Technology as course assistant in laboratory exercises, Sweden
2014	Participated in an exchange project at Zhejiang University, Hangzhou, China. (3 weeks) Thesis title: <i>Quartz Enhanced Photoacoustic Spectroscopy</i>
2014	Member of student theatre orchestra, <i>Fysikalen</i> , Sweden.
2011	Participated in a classical music youth exchange program with italian music students (1 week), Sweden.
2011	Participated in a research summer school project at Stockholm University, Sweden.

Awards and Scholarships

2023	Received a bonus of 80000 SEK from Employer Ericsson AB to promote me staying in the company.
2020	Received a travel scholarship worth 11000 SEK, " <i>Karl Engvers stiftelse</i> ".
2018	Received a travel scholarship worth 11000 SEK, " <i>ÅForsk resestipendium</i> ".
2018	Received a travel scholarship worth 20000 SEK, " <i>Roland Gustafssons Stiftelse för teoretisk fysik</i> ".
2012	Award and scholarship in classical music performance, " <i>stipendium samspel</i> ", piano.

Hobbies

Interested in classical music, plays violin and piano. Started piano lessons at the age of 8 years. Build model aircraft, assemble electronics and soldering. Have a hobby machine workshop at home where I enjoy to machine model engines. Have constructed and sold model engines to other hobby enthusiasts through online platforms.