Eric Nilsson | Curriculum vitæ

Department of Physics – Chalmers University of Technology – Gothenburg, Sweden
+46761413451 • nieric@chalmers.se • www.ericnilsson.dev

Born: April 1, 1997, Arvika, Sweden
Citizenship: Swedish

Updated: January 16, 2026

Education

Chalmers University of Technology **Gothenburg, Sweden**
Ph.D. Physics (Ongoing) *2021-2026*
Funded by the Area of Advance Nano (former *Excellence Initiative Nano*).
Topic(s): Holographic models for strongly correlated electron systems and unconventional transport in 2D materials.
Supervisor: Prof. Ulf Gran.
Planned defense date: June 11, 2026
Licentiate thesis: *Electron Transport and Collective Modes in Fermi and non-Fermi Liquids*. Defended April 2024. *Link to thesis.*
Visiting Ph.D. student with Prof. Koenraad Schalm at Leiden University, Sep-Dec 2024.

Chalmers University of Technology **Gothenburg, Sweden**
M. Sc. Physics *2019-2021*
Average grade: 5.0/5.0. Thesis: *Surface plasmon polaritons in strongly correlated media*.
Supervisor: Prof. Ulf Gran. *Link to thesis.*

Chalmers University of Technology **Gothenburg, Sweden**
B.Sc. Engineering Physics *2016-2019*
Average grade: 4.87/5.0. Thesis: *Simulating Many-Particle Systems on an Emulated Quantum Computer*. Supervisors: Profs. Christian Forssén and Andreas Ekström. *Link to thesis (in Swedish).*

Awards

CBA Poster Prize *2025*
Prize for best poster at the yearly Community Building Nano at Chalmers University of Technology. Recieved 10 000 SEK in travel money.

Excellence Initiative Nano Excellence Ph.D. student *2021*
Allows for freely chosen research within in the field of Nanoscience at Chalmers. Chosen as one of three out of more than 300 applicants.

Guldkärnan award for best T.A. *2018, 2021*
Received the prize for best Teaching Assistant (twice) by the students at the Engineering Physics and Engineering Mathematics programs at Chalmers.

Teaching experience

Department of Physics **Chalmers**
Supervision *2024*
Main supervisor of M.Sc. student Eli Ismailov. Thesis: *Fermi Surfaces of Holographic Metals*. *Link to thesis.*

Department of Physics **Chalmers**
Supervision *2024*
Main supervisor for a group of six B.Sc. students doing a thesis on holographic methods in condensed matter physics. *Link to thesis (in Swedish).*

Department of Physics **Chalmers**
Lecturing *2022-*
I give half of the lectures and is responsible for all admin in the String Theory course (FFM485) offered by the M.Sc. Physics program.

Department of Physics **Chalmers**
Teaching Assistant *2021-*
Teaching assistant (weekly exercise classes; grading) in Mechanics I (FFM516) and II (TIF375) at the Engineering Physics program.

Department of Mathematical Sciences **Chalmers**
Teaching Assistant *2017, 2019-2020*
Part-time and Amanuensis teaching assistant positions for courses in Analysis (1D and multi-variable), Linear Algebra and Statistics taught at the Engineering Physics and Engineering Mathematics programs.

Conferences attended

SCGP, Stony Brook University **Stony Brook, New York, USA**
Black holes and strongly coupled thermal dynamics *2025*

KITP, UCSB **Santa Barbara, California, USA**
Quantum Matter with and without Quasiparticles *2023*

NORDITA **Stockholm, Sweden**
Recent Developments in Strongly-Correlated Quantum Matter *2022*

Schools attended

NORDITA **Stockholm, Sweden**
Quantum Connections *2023*
Broad topic summer school with several Nobel laureates.

Grants recieved

The Royal Swedish Academy of Sciences
General announcement for physics ("Stiftelsen Hierta Retzius fond för vetenskaplig forskning") *2024*
24 400 SEK. Funded travel to the Simons Center for Geometry and Physics.

The Royal Swedish Academy of Sciences
General announcement for physics ("Stiftelsen Olof Ahlöfs fond") *2022*
23 100 SEK. Funded travel to KITP.

Talks given

Leiden University **Quantum matter group seminar**
"Quantum critical theories in periodic potentials: Toward Holographic EMT" *2025-12-08*

Chalmers University of Technology **Nano SmallTalk**
"Holographic Effective Medium Theory" *2025-12-01*

Chalmers University of Technology **SHP seminar**
"Quantum critical theories in periodic potentials: Toward Holographic EMT" *2025-11-07*

Solbergagymnasiet **Popular science presentation to high school students**
"Från rostig koppar till svarta hål" *2025-10-07*

Leiden University **Quantum matter group seminar**
"Nonequilibrium relaxation and odd-even effect in 2D Fermi liquids" *2024-09-25*

Chalmers **Quantum Materials seminar**
"Holographic Models for Plasmons in Strange Metals" *2022-11-30*

Chalmers University of Technology **SHP seminar**
"Electromagnetic response in strongly correlated media" *2022-06-10*

Languages

Swedish: Native
English: Advanced *Fluent, 8.5/9.0 IELTS*
Spanish: Intermediate *Intermediate reading comprehension, simple communication*

Computer skills

Basic: Git

Intermediate: Linux, C, Python, MATLAB, Bash

Advanced: LaTeX, Wolfram Mathematica

Refereed journal articles

Nilsson, Eric, Ulf Gran, and Johannes Hofmann (Oct. 2025). "Nonequilibrium Relaxation and Odd-Even Effect in Finite-Temperature Electron Gases". In: **Physical Review X** 15.4, p. 041007. arXiv:2405.03635.

Preprints

Gran, Ulf, Eric Nilsson, and Johannes Hofmann (Dec. 2023). "Shear Viscosity in Interacting Two-Dimensional Fermi Liquids". arXiv:2312.09977.

Nilsson, Eric and Koenraad Schalm (Dec. 2025). "Quantum Critical Theories in a Periodic Potential: Strange Metallic Thermoelectric and Magnetotransport". arXiv:2512.19480.

Theses

Nilsson, Eric (2021). "Surface Plasmon Polaritons in Strongly Correlated Media". M.Sc. thesis. Chalmers University of Technology.

Nilsson, Eric (2024). "Electron Transport and Collective Modes in Fermi and Non-Fermi Liquids". Licentiate thesis. Chalmers University of Technology.