

# Gustav Vallinder

Industrial PhD Student

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## About

Control engineer and software developer, currently pursuing an industrial PhD in automatic control for autonomous driving at Scania and KTH. I am passionate about combining numerical methods, physics and software to improve the safety and performance of vehicles. After finishing my PhD, I intend to continue my career in industrial R&D.

## Experience

### Industrial PhD Student

*Scania CV AB & KTH Royal Institute of Technology | Oct 2022 - Present*

- Conducting motion control research in the AllDrive project to enable safe autonomous driving of semi-trailer trucks in winter conditions.
- Developing friction-aware motion control algorithms and software for testing at winter proving grounds in northern Sweden.
- Collaborating cross-functionally with students, researchers and engineers in industry and academia.

### Software Developer

*Epiroc Rock Drills AB | Aug 2021 - Aug 2022*

- Developed control, obstacle avoidance and localization features for autonomous underground mining trucks and LHDs.
- Improved the performance of vehicles at customer sites through tuning, in-vehicle tests and analysis of log data.

## Education

### Master of Science in Electrical Engineering

*Uppsala University | Aug 2016 - Jun 2021*

- Specialization on systems and control with courses in control theory, signal processing, embedded systems, machine learning, and optimization.
- Spent a year as an exchange student in Germany at the Technical University of Munich.
- Did master thesis with Epiroc to improve speed and accuracy of autonomous LHDs using path following model predictive control.

## Skills

### Interests

Autonomous Systems, Vehicle Dynamics, Model Predictive Control, Modelling and Simulation, State Estimation.

### Software

MATLAB, C++, Python, Linux, Git, Jira.

## Additional Experience

### Teaching

Automatic Control, Basic Course, KTH Royal Institute of Technology, 2023.  
Digital Technology and Electronics, Uppsala University, 2019.  
Digital Electronics, Uppsala University, 2018.

### Volunteering

Head of Corporate Relations, Uppsala Studentförening Elektroteknik, 2018.  
Student Union Council Rep., Uppsala Studentförening Elektroteknik, 2017.

## Merits

### Memberships

Affiliated PhD Student, WASP Graduate School.  
Member, SVEA Swedish Vehicular Engineering Association.  
Affiliate, IFAC International Federation of Automatic Control.

### Awards

Forsmark Kraftgrupp AB Scholarship, 2015.