Fredrik K. **Gustafsson**

PhD Student in Electrical Engineering

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- I am a first-year PhD student whose general areas of interest are machine learning, computer vision and autonomous robots. My research focuses on uncertainty-aware deep learning for autonomous driving. I aim to be a key contributor in the development of fully autonomous vehicles and hope to experience the day when we can safely say:
"Do you remember when people used to get killed in traffic?".

Education

Stanford University   *Sep. 2016 - Jun. 2017*

Graduate Exchange Student in Electrical Engineering [4.15/4.30]
- Coursework included deep learning, nonlinear filtering and optimal control.

Linköping University   *Aug. 2013 - Jun. 2018*

Master of Science in Electrical Engineering | Bachelor of Science in Applied Physics and Electrical Engineering
- Master's profile: Control and Information Systems.

Please visit fregu856.com for complete coursework.

Relevant Experience

PhD Student   *Sept. 2018 -*

Uppsala University   *Uppsala, Sweden*
- Uncertainty-aware deep learning for autonomous driving, in the group of Prof. Thomas Schön.

Software Engineer   *Aug. 2018*

BMW Group   *Munich, Germany*
- Feature development for autonomous driving and advanced driver assistance systems.

Master's Thesis Student   *Jan. 2018 - Jun. 2018*

Zenuity   *Gothenburg, Sweden*
- 3D detection of vehicles in LiDAR and/or image data, using deep learning.

Deep Learning Intern   *Jun. 2017 - Aug. 2017*

Zenuity   *Gothenburg, Sweden*
- Developed a deep learning demo/test platform based on a standard 1/10 scale RC car.

Algorithm Engineer   *Jun. 2016 - Aug. 2016*

T Engineering AB   *Trollhättan, Sweden*
- Developed a web tool for analysis and visualization of car engine sensor data for a fleet of test vehicles, using Python (Flask) and MySQL.

Recent Projects

SMAUGS - Autonomous Minesweeping System (Ground Vehicle & Drone)   *Sep. 2017 - Dec. 2017*

Course project at Linköping University | C++, Python, ROS

Object Detection for Autonomous Driving - TensorFlow Implementation of SqueezeDet   *Aug. 2017 - Sep. 2017*

Personal project | Python, TensorFlow

Semantic Segmentation for Autonomous Driving - TensorFlow Implementation of ENet   *Aug. 2017 - Sep. 2017*

Personal project | Python, TensorFlow

The SE-Sync Algorithm for Pose-Graph SLAM   *May 2017 - Jun. 2017*

Course project at Stanford University | C++, ROS, MATLAB

Neural Image Captioning for Intelligent Vehicle-to-Passenger Communication   *Jan. 2017 - Mar. 2017*

Course project at Stanford University | Python, TensorFlow

Rasperino - Autonomous/Web Controlled Raspberry Pi & Arduino Robot   *Jun. 2016 - Aug. 2016*

Personal project | Python, C, HTML, JavaScript

Spider Pig - Autonomous Hexapod Robot   *Jan. 2016 - Jun. 2016*

Bachelor thesis project at Linköping University | C

Please visit fregu856.com for further information.

Skills

Software (advanced)	Python (NumPy, PyTorch, TensorFlow, Flask), C/C++, ROS, MATLAB.
Software (basic)	SQL, HTML, LaTeX, Linux, Git, Simulink, JavaScript, Scheme.
Languages	Swedish, English.