Fredrik K. **Gustafsson**

PhD Student in Probabilistic Deep Learning

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- I am a PhD student whose general areas of interest are computer vision and autonomous robots. My research focuses on probabilistic deep learning for automotive computer vision applications.

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 *[4.9/5.0]*

- Master's profile: Control and Information Systems. I was awarded the Tryggve Holm medal for outstanding student achievements.

Please visit fregu856.com for complete coursework.

Relevant Experience

PhD Student *Sep. 2018 -*

Uppsala University *Uppsala, Sweden*

- Probabilistic deep learning for automotive computer vision applications, 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.

Selected Publications

How to Train Your Energy-Based Model for Regression BMVC, 2020

Fredrik K. Gustafsson, Martin Danelljan, Radu Timofte, Thomas B. Schön

Energy-Based Models for Deep Probabilistic Regression ECCV, 2020

Fredrik K. Gustafsson, Martin Danelljan, Goutam Bhat, Thomas B. Schön

Evaluating Scalable Bayesian Deep Learning Methods for Robust Computer Vision CVPR Workshops, 2020

Fredrik K. Gustafsson, Martin Danelljan, Thomas B. Schön

Please visit fregu856.com for further information.

Selected Projects

PyTorch Implementation of DeepLabV3 - Semantic Segmentation for Autonomous Driving *Jun. 2018 - Sep. 2018*

Personal project | Python, PyTorch

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

Please visit fregu856.com for further information.

Skills

Software (advanced) Python (NumPy, PyTorch, TensorFlow, Flask), C/C++, ROS, MATLAB, LaTeX.

Software (basic) SQL, HTML, Linux, Git, Simulink, JavaScript, Scheme.

Languages Swedish, English.