

Joel Kronander

Curriculum Vitae

+46 (0)70 5888904
✉ joel.kronander@liu.se
🌐 [Web page](#)

Summary

I am a recent Computer Graphics/Vision PhD graduate, currently looking for new challenges! During my PhD studies I worked with Monte Carlo image synthesis, computational imaging, scene reconstruction, appearance modeling and other topics in graphics/vision. I also have a strong interest in Machine Learning, and in particular I have significant experience with Bayesian Inference and Deep Learning. I am very excited about the current progress being made in Machine Learning, and enjoy keeping up to date with the latest developments. Parallel to my PhD studies I have co-founded and operated a startup, RaySpace AB, providing software solutions in the areas of computational imaging and appearance modeling.

I would describe myself as creative, enthusiastic and hardworking. I truly enjoy collaborating in a team, sharing my experience/expertise with others and taking on new challenges!

Education

- Dec 2015 **PhD Computer Graphics/Vision**, *Linköping University*, Sweden.
Thesis: [Physically Based Rendering of Synthetic Objects in Real Environments](#)
Advisors: Jonas Unger and Anders Ynnerman
- 2009 **MS Technical Physics & Electrical Engineering**, *Linköping University*, Sweden.
Minor in Applied Mathematics

Experience

- 2015–Present **Principal research engineer**, *Linköping University*, Norrköping, Sweden.
Research and development on Monte Carlo methods, Deep Learning and rendering.
- 2010–Present **Co-Founder and Technology Specialist**, *Ray Space AB*, Norrköping, Sweden.
Developing software solutions in the areas of computational imaging, appearance capture, and digital production pipelines. Customers include IKEA Communications AB and Volvo
- 2010–2015 **PhD Student**, *Linköping University*, Norrköping, Sweden.
Publications in major conferences and journals in graphics/vision/statistical machine learning, one year of graduate courses and teaching duties ~ 20%.
- 2009–2010 **Research engineer**, *Linköping University*, Norrköping, Sweden.
Developed software for predictable high-fidelity volume rendering.
- 2009–2010 **Visiting Researcher**, *Simon Fraser University*, Vancouver, Canada.
Visiting Prof. Torsten Möller at the GruVi lab, worked on high-fidelity volume rendering.
- 2008 **ERASMUS Exchange**, *Ecole Polytechnique Fédéral de Lausanne*, Switzerland.
Courses in Signal Processing, Machine Learning, and Computer Science.

Research experience

- Monte Carlo methods
- Deep Learning
- Structure-from-motion
- HDR Imaging and Video
- Physically Based Rendering
- Bayesian Inference
- Statistical Image & Signal Processing
- Appearance Modeling

Publication Bibliometrics.

Citations: 243 , h-index: 8, i10-index: 7 (source *Google Scholar*, December 2016)

8 Journal Publications, 17 Conference Publications, 1 Book Chapter

A detailed list of publications is available at <http://vcl.itn.liu.se/members/joel-kronander>

Selected Teaching Experience.

- **PhD Course - Deep Learning** - 2016 - Teaching Fellow
- **Advanced C++** - 2011, 2012 - Teaching Assistant
- **Computational Photography** - 2012, 2013, 2014 - Teaching Fellow

Supervised Master Thesis Students.

I have supervised more than 11 master thesis students in academia and industry

Selected PhD Courses.

- **Statistical Machine Learning** - with Professor Thomas B. Schön
- **System Identification** - with Professor Lennart Ljung
- **Differential Geometry** - with Associate Professor Krzysztof Marciniak
- **Geometry for Computer Vision** - with Associate Professor Per-Erik Forseen
- **Multidimensional Signal Analysis** - with Assistant Professor Anders Brun
- **Presentation Techniques for Research**
- **Computational Inference in Dynamical Systems** - with Professor Thomas B. Schön

Software skills

Significant experience with:

C++(11), CUDA, Python, Matlab, Tensorflow, CMake, Unix/Linux

Samples of Major Software Projects:

- **Liu-HDRV Camera Software Stack** <http://www.hdrv.org/>
Development and design of a state-of-the-art multisensor HDR video camera. Including low-level control and communication with sensors, mid-level statistical image fusion and high-level GUI and visualization. Real-time reconstruction of 30 HD resolution HDR fps from raw 1 GB/sec data stream. Software stack implemented in C, C++ and CUDA
- **Control and Calibration Software for High-Precision Gonioreflectometer**
Development of mid and high level software for calibration and control of multispectral appearance capture device, *Gonioreflectometer* , delivered to IKEA Communications AB for production use. C++, Python and Matlab.

References

Jonas Unger, *PhD Supervisor*, Associate Professor.

Division of Media and Information Technology, Linköping University

E-mail: jonas.unger@liu.se, Phone: +46 11 363436, *Personal webpage*

Anders Ynnerman, *PhD Co-Supervisor*, Professor, Head of Division.

Division of Media and Information Technology, Linköping University

E-mail: anders.ynnerman@liu.se, Phone: +46 11 363309, *Personal webpage*

Thomas B. Schön, Professor of the Chair of Automatic Control.

Division of Information Technology, Uppsala University

E-mail: thomas.schon@it.uu.se, Phone: +46 18 4712594, *Personal webpage*