

FLORIAN SCHROFF

Florian Schrott, PhD ◦ Venice, CA, 90291, USA ◦ www.florian-schrott.de

Qualifications

- Software engineering, big data, machine learning (deep learning) and computer vision experience at Google Inc.
- PhD from the University of Oxford, UK: object recognition, computer vision, machine learning
- Proven ability to realize multiple goals under tight deadlines
- Demonstrated management and team oriented software development at companies and research institutions
- Communicated scientific content in teams and at top tier international conferences

Work and Research Experience

- 10/2011–current **Google Inc., Venice, CA:** Staff Software Engineer
- Development of computer vision and machine learning algorithms and products
 - Leading Human Sensing Team: face/person recognition and descriptions
 - FaceNet: developed state-of-the-art face recognition engine
- 09/2009–08/2011 **University of California San Diego, CA:** Postdoctoral scholar, Computer Vision Laboratory
- Researched unconstrained face recognition in image sets and videos for application in a maritime environment
 - Contributed research and development efforts to the Visipedia project, a Wikipedia inspired visual encyclopedia
 - Supervised students to develop a web-based demo for Visipedia to upload and classify images of birds
- 05/2009–07/2009 **University of Oxford, UK:** Postdoctoral scholar, Robotics Research Group
- Collaborated with “Classical Art Research Online Services” to facilitate access to over 100,000 vase images
 - Researched visual and shape-based browsing of the Beazley Archive
 - Developed web-based tools for classification of newly uploaded vase images
- 07/2008–10/2008 **Microsoft Research, Redmond, WA:** Research Internship, Interactive Visual Media Group
- Researched unsupervised appearance-based location clustering of home and commercial videos
 - Implemented a tool for intuitive location-based browsing of videos
 - Developed demo in cooperation with senior researchers and engineers
- 02/2005–09/2005 **German Research Center for Artificial Intelligence, Kaiserslautern, Germany:** Scientific Researcher
- Researched for project: “Image-Based Personal Computing Tools” on optical character recognition
 - Conducted research in document analysis and handwritten character recognition
 - Mentored students and prepared “Computer Gaming Seminar” and “Human Computer Interaction” lecture
- 11/2004–12/2004 **Universität Karlsruhe, Germany:** Research Assistant, Institute for Algorithms and Cognitive Systems
- Conducted research in the area of image recognition and camera self-calibration
 - Implemented and evaluated a range of algorithms for the project “Model-Based Tracking in Image Sequences”
 - Collaborated with universities in Europe on joint project “Cognitive Vision Systems”
- 09/2003–12/2003 **University of Massachusetts Amherst, MA:** Research Assistant, Multi-Agent Systems Lab
- Conducted extensive research in the multi-agent systems area
 - Designed and implemented a system for evaluating the performance of multi-agent systems in Java
 - Coordinated with the team to include the evaluation module into an automatic multi-agent systems generator
- 05/2001–08/2003 **CAS Software, Inc., Karlsruhe, Germany:** Software Developer
- Designed and developed software in Delphi and added database functionality to existing system
 - Developed “Computer-Aided Selling” applications for Daimler, Inc.

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Education

- 10/2005–04/2009 **PhD**, University of Oxford, UK, (graduated: Aug 1st, 2009)
Research topics: Object category classification, automated object-based image search
Thesis: “Semantic Image Segmentation and Web-Supervised Visual Learning”
(supervisors: Prof. A. Zisserman (Visual Geometry Group), Dr. A. Criminisi (Microsoft Research, Cambridge, UK))
- Researched visual object segmentation, automatic learning of object classifiers
 - Improved machine learning methods for application to computer vision
 - Published and presented on object segmentation in natural photographs and weakly-supervised image classification at national and international conferences
 - Produced software toolboxes related to object classification and image retrieval
 - Awarded funding through the Microsoft Research European PhD Scholarship Program
 - Tutored third-year students during course related Matlab workshops
- 05/2004–11/2004 **Diploma Thesis**, Institut für Algorithmen und Kognitive Systeme, Universität Karlsruhe, Germany
Topic: “Self-Calibration of a Monocular Camera Using a Sequence of Traffic Pictures” (advisor: Prof. Dr. H.-H. Nagel):
- Developed a method for camera calibration using hyperbolic approximations of car and street tracks
 - Implemented the calibration module for Motris (Model-Based Tracking in Image Sequences) in Java
- 10/1999–11/2004 **Diploma in Computer Science**, Universität Karlsruhe, Germany (Grade “very good”)
Minor in Mathematics
Specializations:
- Reliability Architectures of Systems: Symmetric and Public-Key Cryptography
 - Artificial Intelligence, Robotics
 - Abstract Algebra: Group, Ring, and Field Theory, Galois Theory, Commutative Algebra
- 09/2002–12/2003 **Master of Science**, University of Massachusetts Amherst, MA, USA, (GPA 3.9/4.0)
- Awarded Baden-Württemberg Program exchange scholarship
 - Thesis: “Analytic Performance Model of Multi-Agent Organization Structures” (advisor: Prof. V. Lesser)
 - Researched and developed a model for describing the performance of a multi-agent system, depending on its organizational structure
 - Coursework: Artificial Intelligence, Information Retrieval, Networking, Theory of Computation, Reinforcement Learning, Case-Based Reasoning, Resource-Bounded Reasoning, Robotics

Skills and Knowledge

Machine Learning: CNN (TensorFlow), SVM, random forest, Bayesian models, CRF, PCA, LDA, pLSA
Programming: C++, Python, TensorFlow, Matlab, Unix Shell Scripting, SQL
Languages: German, English (fluent); Spanish, French (basic knowledge); Latin (advanced Latin qualification)

Research Interests

Computer Vision: Image and pattern recognition, embedding/metric learning, face recognition
Machine Learning: Information and image retrieval, supervised and unsupervised machine learning, deep learning

Selected Publications

FaceNet: A Unified Embedding for Face Recognition and Clustering. Schroff, Kalenichenko, Philbin. *CVPR 2015*
Pose, Illumination and Expression Invariant Pairwise Face-Similarity Measure via Doppelgänger List Comparison. *ICCV, 2011*
Visual Recognition with Humans in the Loop. Branson, Wah, Babenko, Schroff, Welinder, Perona, Belongie. *ECCV, 2010*
Object Class Segmentation Using Random Forests. Schroff, Criminisi, and Zisserman. *BMVC, 2008*
Harvesting Image Databases from the Web. Schroff, Criminisi, and Zisserman. *ICCV, 2007*