

# FLORIAN SCHROFF

Florian Schrott, PhD ◦ Venice, CA 90291, USA ◦ [www.florian-schrott.de](http://www.florian-schrott.de)

## Qualifications

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- Software engineering, big data, machine learning (deep learning) and computer vision lead at Google Inc.
- Demonstrated leadership of mid-sized team (20+) and collaboration-focused project leadership
- Led multi-phased research initiatives with direct impact on product development

## Work and Research Experience

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- 10/2011–current    **Google Inc., Venice, CA:** Second-Level Manager and Tech Lead
- Management of 20+ Team
    - Over five years of management experience: team development, hiring, strategic leadership
  - Face/person recognition and semantic descriptions (appearance, expressions)
    - Developed computer vision and machine learning algorithms and products
    - Product impact with Google Photos, Cloud, Nest, Pixel
    - Focus on machine learning fairness and de-biasing
- 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

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## Education

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- 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

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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

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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

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**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