Kevin Matzen

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Education	**Cornell University**	2010 - Expected 2016

Ph.D. in Computer Science - Advisors: **Noah Snavely** and **Kavita Bala**
Research Interests: Computer Vision, Computer Graphics, Robotics
- Extracting knowledge from large-scale Internet photo collections in order to automatically understand the visual world across space and time.

University of Michigan   2006 - 2010
BSE Computer Science Engineering; BSE Computer Engineering   Summa Cum Laude

Honors and Awards

ECCV Best Paper Award   2014

Teaching Assistant Excellence Award   2010

Elected to Eta Kappa Nu - National EECS Honor Society   2007

Refereed Publications

Kevin Matzen, Noah Snavely, **"BubbLeNet: Foveated imaging for visual discovery."** In Proceedings of the International Conference on Computer Vision (ICCV), 2015.

Kevin Matzen, Noah Snavely, **"Scene Chronology."** In Proceedings of the European Conference on Computer Vision (ECCV), 2014. **Best paper award.**

Kevin Matzen, Noah Snavely. **"NYC3DCars: A Dataset of 3D Vehicles in Geographic Context."** In Proceedings of the International Conference on Computer Vision (ICCV), 2013.

Work Experience

Google   Software Engineering Intern
Mountain View, CA   Summer 2015
Worked with the **Jump** camera team to develop new ways to capture emersive, 360 degree, stereoscopic video.

Google   Software Engineering Intern
Mountain View, CA   Summer 2014
Developed a computer vision system using Google Brain's distributed deep learning platform, DistBelief, to learn from the massive Street View image corpus.

Microsoft   Software Development Engineer Intern
Redmond, WA   Summer 2009
Designed, implemented, and tested .NET SDK features used in the first commercial release of Windows Azure as part of the Azure Developer Experience team. Examples include adding support for Azure Queue as a transport mechanism for Windows Communication Foundation's async task processing framework and rewriting some storage clients to reduce memory usage.

National Instruments   Software Development Intern
Austin, TX   Summer 2008
Designed and implemented features to make it easier to use devices such as CompactRIO FPGAs and GE Fanuc reflective memory PCIe cards with NI LabVIEW and NI VeriStand (hardware-in-the-loop testing platform).

Aero-Metric, Inc.   Programming Intern
Sheboygan, WI   Summer 2007
Developed a flight tracking and project management system with Google Earth integration.

Projects

Learning to Understand Visual Style in Large-scale Photo Collections   2014-Present
Analyzing millions of social media photos of people to identify and learn style and fashion trends both geographically and temporally.

Spatio-temporal Reconstruction for Large-scale Photo Collections   2013-2014
Robustly estimate visual change in urban scenes over time (e.g. billboards, signs, graffiti, etc.) to extend traditional 3D reconstructions to 4D.
Key result is a system that takes as input a keyword search such as "Times Square", collects millions of photos from Flickr, and produces an automated 4D reconstruction.

Tightly Integrated Perception and Planning in Intelligent Robotics   2010-Present
Working to improve vehicle detection, pose estimation, and tracking by tightly integrating state-of-the-art vision and tracking techniques in a verifiable framework.
Work also includes sensor and embedded system development on Cornell's driverless car, Skynet.

Teaching Experience

Cornell Teaching Assistant   2010
Teaching assistant for undergraduate computer vision course.

University of Michigan Instructional Assistant   2009
Instructional assistant for undergraduate operating systems course, EECS 482, for two semesters.

Professional Activities

Reviewer
3D Vision (3DV), Computer Vision and Pattern Recognition (CVPR), European Conference on Computer Vision (ECCV), International Conference on Computer Vision (ICCV), User Interface Software and Technology (UIST)

Course Work

Machine Learning	Database Systems	GPS Receiver Design
Realistic Image Synthesis	Computer Vision	Computational Motion
Algorithms	Programming Languages	Data-Sparse Matrix Computation

Popular Press

Scene Chronology   2014
Featured in **NewScientist**