Scott Wehrwein

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Objective

A faculty position at an institution whose primary mission is the education of undergraduates.

Research Areas

Computer vision; machine learning; illumination modeling; motion analysis.

Education

Cornell University
Ph.D in Computer Science — Spring 2018 (expected)
M.S. in Computer Science — April 2016
Advisors: Noah Snavely and Kavita Bala
Minor: Applied Mathematics

Middlebury College
B.A. in Computer Science, *summa cum laude* — May 2010

Honors and Awards

NSF Graduate Research Research Fellowship	2014
Cornell Computer Science Teaching Awards	2013–2015
MITRE Internal R&D Grant ($50,000)	2011
Middlebury Computer Science Academic Achievement Award	2010
Phi Beta Kappa Society	2010
CCSCNE Programming Contest Winner	2008

Teaching Experience

Object Oriented Programming and Data Structures — Spring 2017
Co-instructor

Shared responsibility for all aspects of this course with my co-instructor, David Gries. Introduced online polling into the course for the first time, giving students the opportunity to assess their mastery of the material much earlier than was previously possible.

Telemark Skiing — Spring 2017
Co-instructor

Taught telemark skiing in this outdoor physical education course. Feedback from students and co-instructors indicate that my patience, clear explanations of mechanics, and creativity in devising drills were an asset the instructor team.

Introduction to Computer Vision — Spring 2015
Head Teaching Assistant

Managed a TA staff of 10, oversaw ports of two assignments from C to Python and the introduction of a new assignment on CNNs. Gave a handful of guest lectures and held review sessions, office hours, and managed project grading.

Modeling the World — Fall 2014
Head Teaching Assistant

Developed graduate-level course with Professor Kavita Bala, including topic/paper selection, assignments, and lectures. Met individually with undergraduate and graduate student groups to supervise paper presentations and final projects.

Numerical Analysis: Linear and Nonlinear Problems — Spring 2014
Teaching Assistant

Held office hours and graded homework assignments.

Introduction to Computer Vision — Fall 2013
Teaching Assistant

Held one-on-one tutoring sessions with a deaf student. Held office hours and participated in grading.

Introduction to Computing using Matlab and Robotics — Spring 2013
Head Teaching Assistant

Designed and ran weekly lab sections with programming activities applying concepts from lecture. Activities included demosaicing, graph traversal, frequency analysis and the Fourier transform, and the Game of Life. Held office hours and graded projects.

Discrete Structures — Fall 2012
Special Tutor

Held one-on-one tutoring sessions with a hard-of-hearing student.

Outreach Activities

Photons to Filters: The Science of Digital Photography — Spring 2017
Instructor

Developed and taught a 3-day mini-course for 3 classes of AP Physics students. Topics included optics, image capture technology, and image processing techniques. Developed hands-on lab activities for each topic.

CURIE Academy — Summer 2015
Co-instructor

Taught basic programming and image processing skills to 52 high school girls from all over the country as part of a diversity outreach program. Supervised two group final projects on image filters and live webcam face tracking.

Expanding Your Horizons — Spring 2013–2017
Co-instructor; CS department coordinator

Organized and led workshops as part of an annual outreach program for middle school girls interested in STEM. Coordinated CS department applications for multiple workshops and led a workshop using the Scratch visual programming environment to create animations and games.

Publications

- **Scott Wehrwein**, Rick Szeliski. Video Segmentation with Background Motion Models. Spotlight presentation at *British Machine Vision Conference*, September 2017.
- **Scott Wehrwein**, Kavita Bala, Noah Snavely. Shadow Detection and Sun Direction in Photo Collections. Oral presentation at *International Conference on 3D Vision*, October 2015.
- Daniel Hauagge, **Scott Wehrwein**, Kavita Bala, Noah Snavely. Photometric Ambient Occlusion. Transactions on Pattern Analysis and Machine Intelligence, 2015.
- Daniel Hauagge, **Scott Wehrwein**, Kavita Bala, Noah Snavely. Reasoning about Photo Collections using Models of Outdoor Illumination. In *British Machine Vision Conference*, September 2014.
- Daniel Hauagge, **Scott Wehrwein**, Kavita Bala, Noah Snavely. Photometric Ambient Occlusion. Oral presentation at *Conference on Computer Vision and Pattern Recognition*, 2013.
- Daniel J. Townsend, Phillip K. Poon, **Scott Wehrwein**, Tariq Osman, Adrian V. Mariano, Esteban. M. Vera, Michael. D. Stenner, and Michael. E. Gehm. Static Compressive Tracking. In *Optics Express*, 2012.

Work Experience

Facebook, Inc — Summer 2016
Research Intern
Collaborated with Rick Szeliski in the Computational Photography group; project resulted in a paper on video segmentation (see publications).

MITRE Corporation — May 2010–June 2012
Multi-Discipline Systems Engineer
Worked in the Computational Imaging group. Worked on optical compressive tracking, light field cameras, and image-based geolocation. Proposed and was awarded $50,000 internal R&D grant.

Service

- Peer reviewer for: CVPR 2018; 3DV 2017; IEEE TIP; ACM TOG.
- Panelist, CS Department NSF Fellowship Workshop (Fall 2015–2017)
- Cornell Graphics/Vision Seminar Coordinator (Fall 2015)
- Member of the Board of Directors, Finger Lakes Runners Club (November 2014–)
- CS Department Visit Day Czar (Spring 2013)

Technical Skills

Languages:	Python, C/C++, Matlab
Libraries:	Tensorflow, Keras, Numpy/Scipy, OpenCV
Tools:	vim, git, mercurial, LaTeX, Linux, GNU Parallel, AWS