James E. Davis

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Santa Cruz, CA 95064
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Education

Stanford University. Ph.D. in Computer Science, June 2002
Dissertation: "Mixed Scale Motion Recovery"
Advisor: Pat Hanrahan

University of California, Davis. B.S. in Computer Science, June 1993
Diploma with Highest Honors

Research Interests

Human computation. Technology and entrepreneurship for addressing social issues. Information and communication technologies for global development. Computer graphics, computer vision, and computational photography.

Employment

Associate Professor, *University of California, Santa Cruz.* Teach today's students to become tomorrow's leaders. Imagine and invent technologies to change the world. 2008-present.

Assistant Professor, *University of California, Santa Cruz.* Teach today's students to become tomorrow's leaders. Imagine and invent technologies to change the world. 2005-2008.

Scientific Advisory Consultant, *Vsee Lab.* Function as outside technical advisor for a startup focused on video conferencing and remote collaboration. 2002-present.

Senior Research Scientist, *Honda Research Institute*. Developed real-time range scanning technology for use with robotic applications and biomechanical modeling. 2002-2004.

Research Assistant, *Stanford Computer Graphics Lab.* Research, dream, implement, and publish on a dozen different topics in computer graphics and computer vision. 1995-2002.

Teaching Assistant, *Stanford University.* Delivered many help session lectures on computer graphics. Designed, administered and graded course assignments, midterm, and final. Win 1999, Aut 2001.

Consulting Researcher, *Presenter, Inc.* Developed algorithms for image mosaicing which robustly find frame motion despite foreground motion and high levels of image noise. 1999-2000.

Research Intern, *Apple Computer, Inc.* Designed and implemented an algorithm for customizing standard geometrical meshes using texture maps derived from photographs. Summer 1995.

Research Assistant, *Stanford Database Group.* Designed and implemented a document matching system capable of efficiently finding duplicated text phrases in very large databases. 1993-1994.

Management Intern, *Pacific Bell.* Developed an integrated documentation/configuration management system for use with specific in-house CASE tools. Summer 1992, 1993.

Consultant, *UC Davis Music Dept.* Designed and implemented multimedia music instruction software used to teach Introductory Music to thousands of undergraduates. 1991-1992.

Teaching Assistant, *University of California.* Assisted students with concepts and lab work for a computer architecture class. Graded student assignments. 1991.

Newspaper layout assistant, Pizza delivery, Restaurant bus-boy, Pigeon-poop cleanup crew, pre-1990.

Awards and Honors

ICCV Marr Prize (2nd Best Paper) 2009
NSF CAREER, 2008
Mentor Recognition Award, UC San Diego, 2008
Omidyar Network Community Favorites Award, 2007 *(for innovative teaching style of CMPS80J)*
UCSC Excellence in Teaching Award Honorable Mention (top 2% of faculty), 2006
IEEE ICRA Best Vision Paper Award, 2003
NSF Graduate Research Fellowship, 1993-1996
UCDavis Computer Science Department Citation Award, 1993
Phi Kappa Phi, Golden Key, Psi Chi, Pi Mu Epsilon National Honor Societies, 1992
Fourth Place Team, Pacific Region, Annual ACM Programming Contest, 1990, 1992.
First Place, Undergraduate Mathematics Competition, UC Davis, 1990.

Publications

Vassilis Polychronopoulos, Luca de Alfaro, James Davis, Hector Garcia-Molina, Neoklis Polyzotis, "Human-Powered Top-k Lists", Int. Workshop on the Web and Databases (WebDB), 2013.

Jing Liu, James Davis, "Practical 3D+2DTV Displays", *ACM SIGGRAPH (poster),* 2013.

Steven Scher, Jing Liu, Rajan Vaish, Prabath Gunawardane, James Davis, "3D + 2D TV: 3D Displays With no Ghosting for Viewers Without Glasses", *ACM Transaction on Graphics (presented SIGGRAPH 2013).*

Ben Crow, James Davis, Susan Paterson, Julio Miles "Using GPS and recall to understand water collection in Kenyan informal settlements", Water International 38 (1), 43-60, 2013.

Chenxi Zhang, Jizhou Gao, Oliver Wang, Pierre Georgel, Ruigang Yang, James Davis, J Frahm, Marc Pollefeys, "Personal Photo Enhancement Using Internet Photo Collections," *IEEE Trans. on Visualization and Computer Graphics (TVCG),* 2013.

James Davis, Bernd Jähne, Andreas Kolb, Ramesh Raskar, Christian Theobalt, "Time-of-Flight Imaging: Algorithms, Sensors and Applications (Dagstuhl Seminar 12431)", *Dagstuhl Reports 2(10),* pp 79-104, 2012.

Alex Gainer; Mary Roth; James Davis; Philip Strong, "Field Experience with an Open Source Application for Gathering Health Assessment Data in Developing Countries That Saves Data in HL7 Continuity of Care Document Format.", *American Medical Informatics Association (AMIA) Annual Symposium (poster) AMIA-0894-A2012*, 2012

Brent Arata, Wesley Souza, Steven Scher, Prabath Gunawardane, Dustin Escoffery, Sasha Ishikawa, James Davis, and Arnav Jhala, "Full-Body Motion Password Authentication through Kinect", *Advances in Computer Entertainment (poster), (ACE),* 2012.

Prabath Gunawardane, Steven Scher, and James Davis , "Capturing Relightable Images using Computer Monitors", *CVPR Workshop for Computational Cameras and Displays*, 2012.

Alex Gainer, Mary Roth, Philip Strong, James Davis, "A Standards-Based Open Source Application to Gather Health Assessment Data in Developing Countries", *IEEE Global Humanitarian Technology Conference (GHTC),* 2012.

Mrunal Gawade, Rajan Vaish, Mercy Nduta Waihumbu, James Davis, "Exploring Employment Opportunities through Microtasks via Cybercafes", *IEEE Global Humanitarian Technology Conference (GHTC),* 2012.

Deepak Pai, James Davis, "Wally - Crowd Powered Image Matching on Tablets", *Crowdsourcing and Data Mining Workshop at ACM KDD (CROWDKDD),* 2012.

Mrunal Gawade, Rajan Vaish, Mercy Nduta Waihumbu, James Davis, "Exploring microwork opportunities through cybercafés", *ACM Symposium on Computing for Development (DEV) (poster),* 2012.

Ben Crow, James Davis, Julio Miles, "Measuring water collection times in Kenyan informal settlements", *International Conference on Information and Communication Technologies and Development (ICTD),* 2012.

Tom Malzbender, Ramin Samadani, Steven Scher, Adam Crume, Douglas Dunn, James Davis, "Printing Reflectance Functions", *ACM Transactions on Graphics 31(3) (presented SIGGRAPH 2012).*

Ahmed Kirmani, Tyler Hutchison, James Davis, Ramesh Raskar , "Looking Around the corner using Transient Imaging", *International Journal of Computer Vision 95(1), 2011.*

Mario Rodriguez, James Davis, "CrowdSight: Rapidly Prototyping Intelligent Visual Processing Apps", *AAAI Human Computation Workshop (HCOMP)*, 2011.

Oliver Wang, James Davis, "Gradient Domain HDR Compositing", *SIGGRAPH Poster*, 2011.

William Thies, Aishwarya Ratan, and James Davis, "Paid Crowdsourcing as a Vehicle for Global Development", *ACM CHI Workshop on Crowdsourcing and Human Computation*, 2011.

Hungyu Lin, Yi Zhang, James Davis, "Best Document Selection Based on Approximate Utility Optimization", *ACM SIGIR, Poster*, 2011.

Jiejie Zhu, Liang Wang, Ruigang Yang, James E. Davis, Zhigeng Pan, "Reliability Fusion of Time-of-Flight Depth and Stereo for High Quality Depth Maps", *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, July 2011.

Shashank Khanna, Aishwarya Ratan, James Davis, William Thies, "Evaluating and Improving the Usability of Mechanical Turk for Low-Income Workers in India", *ACM Symposium on Computing for Development (DEV)*, 2010.

Prabath Gunawardane, Tom Malzbender, Ramin Samadani, Alan McReynolds, Dan Gelb, James Davis, "Invisible Light: Using Infrared for Video Conference Relighting", *IEEE International Conference on Image Processing (ICIP)*, 2010.

James Davis, Joan Arderiu, Henry Lin, Zeb Nevins, Sebastian Schuon, Orazio Gallo, and Ming-Hsuan Yang, "The HPU", *IEEE CVPR Workshop on Advancing Computer Vision with Humans in the Loop*, 2010.

Oliver Wang, Martin Fuchs, Christian Fuchs, James Davis, Hans-Peter Seidel, Hendrik P.A. Lensch, "A Context-Aware Light Source", *IEEE International Conference on Computational Photography (ICCP)*, 2010.

James Davis, "CS4GD should look like CS not do-goodery", *CCC Workshop on Computer Science and Global Development*, Aug 2009.

Prabath Gunawardane, Oliver Wang, Steve Scher, James Davis, Ian Rickard, Tom Malzbender, "Optimized Image Sampling for View and Light Interpolation", *International Symposium on Virtual Reality, Archaeology and Cultural Heritage (VAST)*, 2009.

Ahmed Kirmani, Tyler Hutchison, James Davis, Ramesh Raskar , "Looking Around the corner using Transient Imaging", *IEEE International Conference on Computer Vision (ICCV),* 2009. [*Marr Prize Honorary Mention (2nd Best Paper)*]

Sebastian Schuon, Christian Theobalt, James Davis, Sebastian Thrun, "LidarBoost: Depth Superresolution for ToF 3D Shape Scanning", *IEEE Conf. on Comp. Vision and Pattern Rec. (CVPR),* 2009.

Oliver Wang, Prabath Gunawardane, Steve Scher, James Davis, "Material Classification using BRDF Slices", *IEEE Conf. on Comp. Vision and Pattern Rec. (CVPR),* 2009.

Prabath Gunawardane, Suresh Lodha, Erin Middleton, Ben Crow, James Davis, "Analyzing Statistical Relationships between Global Indicators through Visualization", *Information and Communication Technology for Development (ICTD),* 2009.

Ian Rickard, James Davis , "Self-calibrating Optical Object Tracking using Wii Remotes", *Sensors, Cameras, and Sys. For Industrial/Sci. App. X, Proc. SPIE v.7249,* Jan 2009.

Oliver Wang, James Davis, Erika Chuang, Ian Rickard, Krystle de Mesa, Chirag Dave, "Video Conference Relighting Using Infrared Illumination", *Proceedings of Eurographics, 2008*.

Jiejie Zhu, Liang Wang, Ruigang Yang and James Davis , "Fusion of Time-of-Flight Depth and Stereo for High Accuracy Depth Maps", *IEEE Conf. on Comp. Vision and Pattern Rec. (CVPR),* 2008.

Tien-Chieng Feng, Prabath Gunawardane, James Davis, Bolan Jiang, "Motion Capture Data Retrieval Using an Artist's Doll", *International Conf. on Pattern Recognition (ICPR),* 2008.

Steven Scher, Ryan Crabb, James Davis, "Making Real Games Virtual: Tracking Board Game Pieces", *International Conf. on Pattern Recognition (ICPR),* 2008.

Orazio Gallo, Sonia Arteaga, James Davis, "A Camera Based Pointing Interface for Mobile Devices", *IEEE International Conference on Image Processing (ICIP),* 2008

Ryan Crabb, Colin Tracey, Akshaya Puranik, James Davis*, "*Real-time Foreground Segmentation via Range and Color Imaging", *CVPR Workshop on Time of Flight Camera Based Comp. Vis.,* 2008.

Sebastian Schuon, Christian Theobalt, James Davis, Sebastian Thrun*, "*High-quality Scanning using Time-Of-Flight Depth Superresolution"*, CVPR Workshop on Time of Flight Camera Based Computer Vision,* 2008.

Mariano I. Lizarraga, David M. Ilstrup, Gabriel Hugh Elkaim, and James Davis, "Aerial Photography using a Nokia N95", *World Congress on Engineering and Computer Science, (WCECS)* 2008.

Xing Chen, James Davis, "An Occlusion Metric for Selecting Robust Camera Configurations", *Machine Vision and Applications Journal,* 19(4), July 2008.

Jerry Yee, James Davis, "Crowd Rendering with non-planar 3D imposters", *ACM Interactive 3D Graphics and Games (I3D), Poster,* 2008.

Liang Wang, Ruigang Yang, James Davis, "BRDF Invariant Stereo using Light Transport Constancy", *IEEE Trans. On Pattern Analysis and Machine Intelligence (PAMI),* 29(9), Sep 2007.

Oliver Wang, Jonathan Finger, QingXiong Yang, James Davis, Ruigang Yang, "Automatic Natural Video Matting with Depth", *Proceedings of the 15th Pacific Conference on Computer Graphics and Applications (Pacific Graphics)*, 2007.

Andrew Leung, Eric Lalonde, Jacob Telleen, James Davis, Carlos Maltzahn, "Using Comprehensive Analysis for Performance Debugging in Distributed Storage Systems", *Proceedings IEEE Conference on Mass Storage Systems and Technologies (MSST)*, 2007.

Jacob Telleen, Anne Sullivan, Jerry Yee, Prabath Gunawardane, Oliver Wang, Ian Collins, James Davis, "Synthetic Shutter Speed Imaging", *Computer Graphics Forum 26(3), Eurographics* 2007.

Qingxiong Yang, Ruigang Yang, James Davis, and David Nister, "Spatial-Depth Super Resolution for Range Images", *IEEE Conf. on Comp. Vision and Pattern Recognition (CVPR),* 2007.

Mark Young, Erik Beeson, James Davis, Szymon Rusinkiewicz, and Ravi Ramamoorthi, "Viewpoint-Coded Structured Light", *IEEE Conf. on Comp. Vision and Pattern Recognition (CVPR),* 2007.

Alexandru Balan, Leonid Sigal, Michael Black, James Davis, and Horst Haussecker, "Detailed Human Shape and Pose from Images", *IEEE Conf. on Comp. Vision and Pattern Recognition (CVPR),* 2007.

James Skorupski, Jerry Yee, Josh McCoy, and James Davis. "Facial Type, Expression, and Viseme Generation", SIGGRAPH Poster, 2007.

Prabath Gunawardane, Eddy Chandra, Tien-Chieng Jack Feng, James Davis. "Keyframe Animation Using an Artist's Doll", SIGGRAPH Poster, 2007.

Dragomir Anguelov, Praveen Srinivasan, Daphne Koller, Sebastian Thrun, Jim Rodgers, James Davis. "SCAPE: Shape Completion and Animation of People", *ACM Transactions of Graphics (SIGGRAPH)*, 24(3), 2005.

Diego Nehab, Szymon Rusinkiewicz, James Davis, Ravi Ramamoorthi. "Efficiently Combining Positions and Normals for Precise 3D Geometry", *ACM Transactions on Graphics (SIGGRAPH)*, 24(3), 2005.

Allen Y. Yang, Hector Gonzalez-Banos, Victor Ng-Thow-Hing, James Davis. "RoboTalk: controlling arms, bases and androids through a single motion interface", *International Conference on Advanced Robotics (ICAR),* 2005.

Diego Nehab, Szymon Rusinkiewicz, and James Davis. "Improved Sub-pixel Stereo Correspondences through Symmetric Refinement", *IEEE International Conference on Computer Vision (ICCV),* 2005.

James Davis, Ruigang Yang, Liang Wang. "BRDF Invariant Stereo using Light Transport Constancy", *IEEE International Conference on Computer Vision (ICCV),* 2005.

James Davis, Diego Nehab, Ravi Ramamoothi, Szymon Rusinkiewicz. "Spacetime Stereo : A Unifying Framework for Depth from Triangulation", *IEEE Trans. On Pattern Analysis and Machine Intelligence (PAMI),* vol. 27, no. 2, Feb 2005.

Drago Anguelov, Praveen Srinivasan, Daphne Koller, Sebastian Thrun, Hoi-Cheung Pang, James Davis. "The Correlated Correspondence Algorithm for Unsupervised Registration of Nonrigid Surfaces", *Neural Information Processing Systems (NIPS),* 2004.

James Diebel, Kjell Reuterswärd, Sebastian Thrun, James Davis, Rakesh Gupta. "Simultaneous Localization and Mapping with Active Stereo Vision," *IEEE/RSJ Conf on Intelligent Robots and Systems (IROS),* 2004.

Hector Gonzalez-Banos, James Davis. "A method for computing depth under ambient illumination using multi-shuttered light", *IEEE Conf. on Comp. Vision and Pattern Recognition (CVPR),* 2004.

James Davis, Xing Chen . "Foveated observation of shape and motion", *IEEE Conf. on Robotics and Automation (ICRA),* 2003. [*ICRA 2003 Best Vision Paper Award Winner*]

James Davis, Maneesh Agrawala, Erika Chuang, Zoran Popovic, David Salesin. "A Sketching Interface for Articulated Figure Animation", *Eurographics/SIGGRAPH Symposium on Computer Animation (SCA),* 2003. [*Nominated among the five best papers at the symposium*]

James Davis, Ravi Ramamoothi, Szymon Rusinkiewicz. "Spacetime Stereo : A Unifying Framework for Depth from Triangulation", *IEEE Comp. Soc. Conf. on Computer Vision and Pattern Recognition (CVPR),* 2003.

James Davis, Hector Gonzalez-Banos. "Enhanced Shape Recovery with Shuttered Pulses of Light", *IEEE International Workshop on Projector-Camera Systems (PROCAMS)*, 2003.

James Davis, Xing Chen. "Calibrating Pan-tilt Cameras in Wide-area Surveillance Networks", *IEEE International Conf. on Computer Vision (ICCV),* 2003.

James Davis, Stephen Marschner, Matt Garr, Marc Levoy. "Filling Holes in Complex Surfaces Using Volumetric Diffusion", *Symposium on 3D Data Processing, Visualization, and Transmission*, June 2002.

James Davis, Xing Chen. "LumiPoint: Multi-User Laser-Based Interaction on Large Tiled Displays", *Displays, Vol. 23-5*, Elsevier Science, 2002.

James Davis, Xing Chen. "A Laser Range Scanner Designed for Minimum Calibration Complexity", *3D Imaging and Modeling (3DIM),* 2001.

Levoy, Pulli, Curless, Rusinkiewicz, Koller, Pereira, Ginzton, Anderson, Davis, Ginsberg, Shade, Fulk. "The Digital Michelangelo Project: 3D scanning of large statues," *ACM Siggraph,* 2000.

Xing Chen, James Davis, and Philipp Slusallek. "Wide Area Camera Calibration Using Virtual Calibration Objects", *IEEE Comp. Soc. Conf. on Computer Vision and Pattern Recognition (CVPR),* 2000.

James Davis. "Mosaics of Scenes with Moving Objects", *IEEE Comp. Soc. Conf. on Computer Vision and Pattern Recognition (CVPR),* 1998.

Sergey Brin, James Davis, and Hector Garcia-Molina. "Copy Detection Mechanisms for Digital Documents", *Proceedings of the ACM SIGMOD Conference,* May 1995.

Selected Other Reports

James Davis. "Mixed Scale Motion Recovery", *Ph.D. Dissertation,* Stanford University, June 2002.

Curated Exhibitions

"Name Your Price: Unpacking Social Cost at 01SJ", Prof. Sharon Daneil, Lyes Belhocine, Kyle McKinley, Drew Detweiler, Antoine Abou Jaoude, Christoph Girard, Phoenix Toews, Prof. James Davis, ZER01, San Jose, Sep 16-19 2010.

Patents

Ahmed Kirmani, Ramesh Raskar, James Davis "Methods and Apparatus for Transient Light Imaging", *US Patent 20,120,075,423*; 2012.

Hector Gonzalez-Banos, James Davis. "Systems and methods for determining depth using shuttered light pulses", *US Patent 7,095,487;* 2006

Professional Activities

Workshop co-Chair / co-Organizer

Dagstuhl Seminar on Time-of-Flight Imaging: Algorithms, Sensors and Applications: Oct 2012
(with Joachim Denzler, Christian Theobalt, Reinhard Koch, Bernd Jaehne, Andreas Kolb, Ramesh Raskar)

Workshop on Human Computation, UC Santa Cruz, Oct 2011.

Workshop on Real Time 3D Sensors and Their Use in conjunction with IEEE CVPR 2004
(with S. Burak Gokturk , Carlo Tomasi, and Abbas Rafii)

Poster Chair

5th International workshop on projector camera systems (PROCAMS), 2008

Session Chair

ACM DEV, "Data Collection": 2012, "Devices": 2010
IEEE ICCP "Computational Cameras": 2010
ACM SIGGRAPH "Performance Capture": 2007
IEEE ICRA "3D Vision (II)": 2003

Program Committee

Conference on Technologies and Applications of Artificial Intelligence (TAAI), 2013.
ACM Symposium on Computing for Development (DEV): 2013, 2012, 2010
3D Camera Workshop at International Conf. on Virtual Reality and Visualization: 2012
IEEE Workshop on Consumer Depth Cameras for Computer Vision at ICCV: 2011
International Symposium 3D Data Processing, Visualization, and Transmission (3DPVT) 2010
National Science Foundation Panels: 2009, 2007
IEEE International Conference on Computer Vision (ICCV) 2009
Dynamic 3D Imaging Workshop 2009
ACM SIGGRAPH 2007
Workshop on Evaluation of Articulated Human Motion and Pose Estimation, NIPS 2006, CVPR 2007
IEEE Computer Vision and Pattern Recognition (CVPR) 2006, 2005
Pacific Graphics, 2006

Paper Reviewing

International Journal of Computer Vision (IJCV): 2012
ACM SIGGRAPH: 2012, 2011, 2009, 2008, 2007, 2006, 2005, 2004
Journal Real Time Image Processing: 2011
IEEE Intelligent Robots and Systems (IROS): 2011
IEEE Trans. Pattern Analysis and Machine Intelligence (PAMI): 2011, '09, '06, '05, '04, '03, '02
ACM Computer Human Interaction (CHI): 2011, 2010, 2004

Austrian Fund of Science: 2010
Communications of the ACM (CACM): 2009
IEEE International Conference on Computer Vision (ICCV): 2009
IEEE Computer Vision and Pattern Recognition (CVPR): 2009, 2006, 2005, 2004, 2003
IEEE Transactions on Multimedia: 2008
ACM SIGGRAPH in Asia: 2008
Computer Graphics Forum: 2008
Pattern Recognition: 2008
IEEE Trans. Image Processing: 2008, 2003
IEEE ICME: 2008
Eurographics: 2007, 2004, 2003
IEEE Journal of Quantum Electronics: 2007
ACM User Interface Systems and Technology: 2007
ACM Transactions on Graphics: 2006, 2005
IEEE Trans. On Circuits and Systems I: 2006
ASME Journal of Computing and Information Science in Engineering: 2006
IEEE Trans. On Automation Science and Engineering: 2005
IEEE Transactions on Visualization and Computer Graphics: 2005
Machine Vision and Applications Journal: 2005
IEEE 3-D Digital Imaging and Modeling: 2005
National Science Foundation Reviews: 2004
Visual Computer: 2003
ACM Symposium of Computer Animation: 2003
Image and Vision Computing: 2003
ACM Symposium on Interactive 3D Graphics: 2003
IEEE Multimedia: 2002
ACM Conf. on Multimedia: 2002

Advisory Boards

Workshop on Human Computation in Digital Entertainment at AAAI AIIDE, 2012
EcoSynth UMBC (NSF Grant) 2012-2015
Imaging Technology Pathways for Musuem Professionals (IMLS Grant) 2010-2013.
eHealth Nigeria, 2010-present: Non-profit developing electronic health record systems
NextSpace, 2009-2011: Startup business incubator and co-location service
YourSharade.com 2007-2008 startup by former student
VseeLab.com 2002-present: startup focused on video based remote collaboration
Cultural Heritage Imaging (Non-profit organization), 2006-present
Developing Advanced Tech. for the Imaging of Cultural Heritage Objects, (IMLS Grant) 2006-2008
Center for Art and Visual Studies, UCSC, 2005-2007

Invited Talks

"AI Meets Human Computation: Panel"
Tamkang University, Tamsui, Taiwan , May 2013.

"Better Displays : On paper and on TV"
National Taiwan University, Taipei, Taiwan , Nov 2012.
Academia Sinica, Taipei, Taiwan, Apr 2013.

"The HPU: Human Processing Units for Computer Vision"
National Chi Nan University, Puli, Taiwan , Oct 2012.

"The Human Processing Unit"
Architectural Support for Programming Languages and Operating Systems (ASPLOS), Mar 2011.

"Transient Imaging"
HP, Palo Alto, Nov 2010.

"The HPU: How lazy coders will impact poverty"
>BIL Conference, Santa Cruz, May 2010.
>CrowdConf, San Francisco, Oct 2010.

"The HPU"
>Microsoft Research, Bangalore, May 2010.
>CrowdSourcing Meetup, Redwood City, Sep 2010.

"Combining 3D Shape Reconstruction and Relighting"
>National Tsing Hua University, Taiwan, Sep 2010.

"The HPU: Human Processing Units as Computer Vision Co-Processors"
>National Tsing Hua University, Taiwan, Sep 2010.

"Video Relighting Using Infrared Illumination"
>HP Labs, Palo Alto, May 2009.

"Exploring Human Body Shape and Motion"
>UCSC Math Dept Colloquium, May 2009.
>Air Force Research Labs, Dayton, Apr 2009.
>Los Alamos National Labs, Apr 2009.
>HP Labs, Bangalore, India, Dec 2008.
>Cognitive Animation Workshop, Yosemite National Park, June 2008.

"Modeling the shape and motion of people (+short-takes on what to do with a mobile phone camera)"
>Ricoh Innovations, Menlo Park, April 2008.

"3D Range Scanning Methods"
>Eurographics Tutorial, Crete, Greece, April 2008.

"Shape estimation : from vision to graphics"
>Stanford University, GRAI Seminar, Feb 2008.

"Hybrid time-of-flight cameras"
>Canesta, Sunnyvale, August 2007.

"Acquiring computer graphics models of people"
>Lahore University of Management Sciences, Pakistan, (remote video link), July 2007.
>Santa Clara University, April 2007.

"Coding space with light"
>Stanford University, Graphics-Café, Feb 2007.

"Shape estimation: from low level images to high level human body models"
>MERL, Boston, Oct 2007.
>Microsoft Research, Redmond, Oct 2006.
>Cal Poly, San Luis Obispo, Mar 2006.
>NASA Ames, Mountain View, Mar 2006.
>Intel, Santa Clara, June 2005.

"Acquiring graphical models of shape and motion"
>Industrial Technology Research Institute, Hsinchu, Jan 2005.
>National Taiwan University, Dec 2004.
>U. Texas, Austin, April 2004.
>UC Santa Cruz, April 2004.

"The challenge and opportunity of cultural diversity"
>ShiLin District Office, Taipei, November 2004.

"Acquiring models of human shape and motion"
>Stanford Biomechanics Group, August 2004.

"Spacetime Stereo – A Unifying Framework for Depth from Triangulation"
>Hewlett Packard Research Lab, Palo Alto, February 2004.

Bay Area Vision Meeting, UC Santa Cruz, June 2003.
Stanford Graphics Retreat, Soquel California, November 2002.

"A Sketching Interface for Articulated Figure Animation"
Princeton University, April 2003.
Columbia University, April 2003.
New York University, April 2003.
U. of Washington Graphics Retreat, September 2002.

"Filling Holes in Complex Surfaces Using Volumetric Diffusion"
Lawrence Livermore National Labs, September 2002.

"Acquiring Reality"
Hewlett Packard Research Lab, Palo Alto, February 2002.
Honda R&D Americas, Mountain View, February 2002.

Teaching

Instructor

CMPS290T: Topics in Computing for Society, Health Records, Spring 2012.
CMPS119: Software for Society, Spring 2012.
CMPS280H: Seminar in Human Computation, Spring 2012.
CMPS280H: Seminar in Human Computation, Fall 2011.
CMPS280J: Seminar in Graphics, Fall 2011.
CMPS160/L: Introduction to Computer Graphics, Fall 2011.
CMPS290T: Topics in Computing for Society, Health Records, Spring 2011.
CMPS280J: Seminar in Graphics, Spring 2011.
CMPS280D: Seminar in Human Computation, Spring 2011.
CMPS260: Computer Graphics, Fall 2010.
CMPS160/L: Introduction to Computer Graphics, Fall 2010.
CMPS290T: Topics in Computing for Society, Fall 2009.
CMPS80J: Technology Targeted at Social Issues, Fall 2009.
CMPS290B: Special topics in Digital Art and New Media, Spring 2009.
CMPS80J: Technology Targeted at Social Issues, Spring 2008.
CMPS280J: Seminar in Graphics, Spring 2008.
CMPS280J: Seminar in Graphics, Winter 2008.
CMPS280J: Seminar in Graphics, Autumn 2007.
CMPS160/L: Introduction to Computer Graphics, Autumn 2007.
CMPS290B: Computational Photography and Vision on Mobile Devices, Autumn 2007.
CMPS280J: Seminar in Graphics, Spring 2007.
CMPS80J: Technology Targeted at Social Issues, Spring 2007.
CMPS280J: Seminar in Graphics, Winter 2007.
CMPS262: Computer Animation, Winter 2007.
CMPS280J: Seminar in Graphics, Autumn 2006.
CMPS160/L: Introduction to Computer Graphics, Autumn 2006.
CMPS280J: Seminar in Graphics, Spring 2006.
CMPS290B: Advanced Topics in Graphics – Computational and 3D Photography, Autumn 2005.
CMPS160/L: Introduction to Computer Graphics, Autumn 2005.
CMPS160/L: Introduction to Computer Graphics, UC Santa Cruz, Spring 2005.
Introduction to Programming for K-6, Sacramento CA, Summer 1984.

Advising

Jing Liu (PhD 2016 expected)
Rajan Vaish (PhD 2016 expected)
David Olsen (left PhD after one year in my group to start company)
Steve Scher (PhD 2012) – "Advances in Display Technology"
Prabath Gunawardane (PhD 2011) – "Advances in Image Based Relighting"
Oliver Wang (PhD 2010) – "Illumination for Clarity"

Alex Gainer (MS 2012) - "A Standards-Based Open Source Application to Gather Health Assessment Data in Developing Countries"

Sascha Ishikawa (MS 2012) – "An Automated Classification of Mineral Spectra: Applications for the Exploration of Planetary Surfaces"

Mario Rodriguez (MS 2011) – "CrowdSight: Rapidly Prototyping Intelligent Visual Processing Apps"

Rita McCue (MS 2011) - "A Flash Card Game Framework for Mobile Devices"

Lourdes Chang (MS 2011) – "Automatic Mobile Monitoring"

Henry Lin (MS 2010) – "Content promotion by utility measure optimization"

Sigmon Myers (MS 2010) – "Green Laser: An App. To Encourage "Green" Consumer Spending"

Zeb Nevins (MS 2009) – "Transcribing Numbers from Images using Amazon Mechanical Turk"

Ian Rickard (MS 2009) – "Self Calibrating Optical Object Tracking using Wii Remotes"

Jack Feng (MS 2008) – "Motion Capture Retrieval using an Artist's Doll"

Jacob Telleen (MS 2007) – "Synthetic Shutter Speed Imaging"

Jerry Yee (MS 2007) – "Crowd Rendering with Non-Planar 3D Impostors"

Tonton Rue (BA 2013)
Dominic Arcamone (BS 2013)
Brian Nguyen (BS 2013)
Brent Arata
Allison Carlisle (BA/BS 2013)
Sarah Ross (BS 2012)
Armin Samii (BS 2011) [Berkeley PhD candidate]
Chirag Dave (BS 2008)
Emily Lovell (BS 2007) [MIT MS; PhD candidate]
Krystle de Mesa (BS 2007) [UC San Diego MS]
Ian Collins (BS 2007)
Patrick Auld (BS 2007)
Erik Beeson (BA 2006)
Mark Young (BS 2006)
Jeremy Randolph (BS 2006)

Awards to my students

Sarah Ross – Pat Mantey Leadership Award 2012 (only 1 award in School of Engineering)

Sarah Ross – Undergraduate Research Deans Award 2012 (top 0.3% of undergraduates)

Kevin Armin Samii – Undergraduate Research Chancellors Award 2011 (top 0.1% of undergraduates)

Kevin Armin Samii – Huffman Prize 2011 (only 1 award in School of Engineering)

Prabath Gunawardane – TA Award 2011 (top 2% of graduate students)

Oliver Wang – ARCS Foundation Fellowship 2008

Slug Biodiesel Team in CMPS80J – KEEN Social Entrepreneurship Idea Award 2007

Adam Smith – Excellence in Teaching Award 2006 (top 1% of graduate students)

Technology Transfer

CHI, 2008 – Interpolation methods for reflectance transformation imaging.

Canesta, 2007 – Matting using joint depth and image data.

Sony PictureGear Ver. 4.0, Digital Photo Manager, 2000 – Methods from my CVPR98 paper were incorporated into this product as the Panorama Maker feature, allowing easy creation of panoramas from a sequence of individual photographs.

AutoType / AutoClick, Tools for Macintosh Input Automation, 1999 – Software to allow scripted automation of keyboard and mouse input into any application. Apple Inc. officially refers to this tool as the solution for scripting Quicktime Player 4.1. Self published and distributed on the net.

Prentice Hall Publishing, Masterworks: A Musical Discovery, 1993 – Educational software allowing interactive browsing of annotated musical content, used in conjunction with an *Introductory Music* class for five years. The software was rewritten by Prentice Hall, now in its second edition.

University Service

Faculty Search Committee, Computer Science Dept, 12-13.
Online Course Strategy Committee, Computer Science Department, 11-12
Chair of Faculty Board of UCSC Center for Entrepreneurship: 2010-2012
Future Directions Committee, Computer Science Department, 10-11
Founder and Director of UCSC Center for Entrepreneurship: 2009-2010
Ad-hoc Committee (personnel case): 2010
UCSC Business Plan Competition: 2009
DANM Executive Committee: 2008-09, 09-10
Grad Committee, Computer Science Department: 2005-06, 06-07, 07-08, 08-09, 09-10
Library Liaison for Computer Science : Spring 2005
Speaker at Intel Architecture Research Workshop, UCSC : April 2005 (*resulted in $107K Intel grant*)