

Sanjeev J. Koppal

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- Objective* To work on cutting edge projects in computer vision and computer graphics
- Areas of Expertise* Novel cameras and lighting, Physics-based vision, Digital cinematography, 3D cinema, Active vision, Image-based rendering, Appearance modeling, 3D reconstruction
- Education*
- Carnegie Mellon University, Robotics Institute
PhD in **Robotics**, August 2009, GPA: 3.79
 - Carnegie Mellon University, Robotics Institute
Masters in **Robotics**, May 2006, GPA: 3.79
 - University of Southern California
Bachelors in **Computer Science**, May 2003, GPA: 3.93
- Skills*
- C/C++/VC++, Matlab, Mathematica, CorelDraw, Premiere, Windows, UNIX/Linux
- Refereed Conference Papers*
- Shadow cameras: Reciprocal views from illumination masks
International Conference on Computer Vision, 2009.
S. J. Koppal and S. G. Narasimhan
(Poster Presentation, 20% acceptance rate)
http://www.cs.cmu.edu/~ILIM/projects/IM/shadow_cameras.html
 - Temporal dithering of illumination for fast active vision
European Conference on Computer Vision, 2008.
S. G. Narasimhan, **S. J. Koppal** and S. Yamazaki
(Oral Presentation, 4% acceptance rate)
<http://www.cs.cmu.edu/~ILIM/projects/IL/dlp-dithering/>
 - Novel depth cues from uncalibrated near-field lighting
International Conference on Computer Vision, 2007.
S. J. Koppal and S. G. Narasimhan
(Poster Presentation, 20% acceptance rate)
http://www.cs.cmu.edu/~ILIM/projects/AA/depth_cues.html
 - Clustering appearance for scene analysis
Conference on Computer Vision and Pattern Recognition, 2006.
S. J. Koppal and S. G. Narasimhan
(Oral Presentation, 4% acceptance rate)
<http://www.cs.cmu.edu/~ILIM/projects/AA/clustering.html>
 - Structured light from scattering media
International Conference on Computer Vision, 2005.
S. G. Narasimhan, S. K. Nayar, B. Sun and **S. J. Koppal**
(Oral Presentation, 4% acceptance rate)
<http://www.cs.cmu.edu/~ILIM/projects/LT/structured/structured.html>

Journals

- Appearance derivatives for iso-normal clustering of scenes
Transactions on Pattern Analysis and Machine Intelligence, 2008.
S. J. Koppal and S. G. Narasimhan
- A Viewer-Centric Editor for Stereoscopic Cinema
S. J. Koppal, L. Zitnick, M. Cohen, S. Kang, B. Ressler and A. Colburn
IEEE Computer Graphics and Applications (to appear)

Workshop papers and Technical reports

- Illustrating motion through DLP Photography
PROCAMS 2009
S. J. Koppal and S. G. Narasimhan
- Taylor Series of Appearance Functions
CMU-Robotics Institute Technical report, 2006
S. J. Koppal, A. Datta, S. G. Narasimhan and K. Nishino

Work Experience

- Post-doctoral Researcher, (2009-present)
Harvard University
Mentor: Prof. Todd Zickler
- Graduate Research Assistant, (2003-2009)
Robotics Institute, Carnegie Mellon University
Advisor: Prof. Srinivasa Narasimhan
- Consultant, (October-November 2008)
Microsoft Research, Interactive Visual Media Group
Mentors: Dr. Sing Bing Kang, Dr. Larry Zitnick and Dr. Michael Cohen
 - Created a mathematical framework for a stereoscopic editing tool
 - Performed user studies to evaluate the tool
- Research Intern, (summer 2008)
Microsoft Research, Interactive Visual Media Group
Mentors: Dr. Sing Bing Kang, Dr. Larry Zitnick and Dr. Michael Cohen
 - Designed an interactive stereoscopic editing tool
 - Wrote preprocessing software to rectify and interlace stereoscopic content
- Software Design Engineer Intern, (summer 2002)
Microsoft Corporation
 - Created a log retrieval utility for SQL Server Storage Engine
- Software Engineer Intern, (summer 2001)
Disappearing, Inc.
 - Worked on Disappearing, Inc. secure email server
- Programmer and Undergraduate Researcher, (1999 to 2003)
Robotics Embedded Systems Lab, University of Southern California
Advisor: Prof. Gaurav Sukhatme

- Patents*
- Patent pending with Microsoft Research (L. Zitnick, M. Cohen, S. Kang and B. Ressler)
- Courses*
- Computer vision
 - Computer graphics
 - Vision sensors
 - Image and video processing
 - Physics-based vision
 - Machine learning
 - Geometry-based vision
 - Optics
- Teaching*
- Graduate Computer Vision (Teaching Assistant)
Instructor: Prof. Martial Hebert
 - Vision Sensors (Teaching Assistant)
Instructor: Prof. Srinivasa Narasimhan
- Awards*
- USC Computer Science Award for Outstanding Achievement (2003)
 - University of Southern California Trustee Scholarship (full tuition) (1999-2003)
 - USC Undergraduate Engineering Research Award (1999-2003)
- Talks*
- Microsoft Research, 2008
Temporal dithering of illumination for fast active vision
Interactive Visual Media Group Seminar
 - Photometric Analysis for Computer Vision, 2007
Shape from shading under near-point lighting and partial views for orthopaedic endoscopies
Oral Presentation of C. Wu's best student paper
 - Carnegie Mellon University, 2006
Clustering appearance for scene analysis
Vision and Autonomous Systems Center Seminar
 - IEEE Conference on Computer Vision and Pattern Recognition, 2006
Oral Presentation of Clustering appearance for scene analysis
- Professional Activities*
- Reviewed conference papers (SIGGRAPH, CVPR and ICCV) and journal papers (IJCV)
 - Committee member for Uland Wong, Mohit Gupta, Ayorkor Mills-Tettey and Peter Barnum
- Leadership*
- President, Pittsburgh Chapter, Association for India's Development (AID), 2005-06
 - RI Representative at Graduate Student Assembly and Roboorg, 2004-06
- Additional information*
- Website: <http://www.koppal.com/>
 - Languages: English, Hindi, Kannada
 - Citizenship: India
- References*
- Available on request for:
 - Prof. Srinivasa Narasimhan
 - Dr. Michael Cohen
 - Dr. Larry Zitnick
 - Prof. Martial Hebert
 - Dr. Sing Bing Kang
 - Prof. Todd Zickler