

Sanjeev J. Koppal

Robotics Institute
Carnegie Mellon University
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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
- Publications pending review*
- A Viewer-Centric Editor for Stereoscopic Cinema
S. J. Koppal, L. Zitnick, M. Cohen, S. Kang, B. Ressler and A. Colburn
Submitted to IEEE CG&A
- 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)
 - 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://graphics.cs.cmu.edu/projects/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/~koppal/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/~koppal/clustering.html>

*Refereed
Conference
Papers (cont.)*

- 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/~srinivas/research/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

*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*

- Graduate Research Assistant, (2003-Present)
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
 - Dr. Shuntaro Yamazaki