

Parneet Kaur

Ph.D. Candidate

Education

- 2014–present **Ph.D. Candidate, Electrical and Computer Engineering**, *GPA: 3.79/4.0*.
Rutgers University, Piscataway, NJ
Advisor: Dr. Kristin J. Dana
- 2013 **M.S., Electrical and Computer Engineering**, *GPA: 3.75/4.0*.
Rutgers University, Piscataway, NJ
Thesis: Automated bridge deck evaluation from ground penetrating radar scans
Advisor: Dr. Kristin J. Dana
- 2007 **B.E., Electronics and Communication Engineering**, *Aggregate: 81%*.
Visvesvaraya Technological University, Bangalore, India

Experience

Research

- Sep 2013 – **Graduate Research Assistant**, *Computer Vision Lab*, Rutgers University, NJ.
- Present
 - Developing computational models to link skin microbiome to skin appearance using multi-modal skin imaging and sparse coding.
 - Developing multi-view clustering techniques for high-dimensional heterogeneous datasets.
- Oct 2011 – **Graduate Research Assistant**, *Center for Advanced Infrastructure and Transportation, and Computer Vision Lab*, Rutgers University, NJ.
- Jun 2013
 - Developed software for analysis of ground penetrating radar (GPR) scans for automatic rebar detection to generate bridge deck deterioration maps using Robotic Assessment Bridge Inspection Tool (RABIT).
 - Integrated machine learning classification using image-based gradient features and robust curve fitting of the rebar hyperbolic signature to locate rebars in the GPR images.

Teaching

- Summer 2013 **Teaching Assistant**, *Department of Electrical and Computer Engineering*, Rutgers University, NJ.
- Spring 2012
 - Programming Methodology I Lab*: Instructed a lab of about 15 students, designed and graded programming assignments, and held office hours.
 - Software Engineering*: oversaw 12 semester-long projects, graded exams and project reports, and held office hours (70+ students).

Industry

- Jun 2011 – **Intern**, *Broadcom Corporation*, Yardley, PA.
- Sep 2011
 - Developed a software prototype for video stabilization in high-definition televisions.
 - Implemented visualization of various motion vector fields.
 - Analyzed impact of decimation and interpolation techniques on frame rate conversion algorithm.
- Oct 2007 – **Software Engineer**, *Robert Bosch Engineering and Business Solutions Limited*, India.
- Sep 2009
 - Developed software for real-time embedded systems deployed in automobile platforms.
 - Conducted requirements analysis, software design and implementation, and software peer reviews, unit and integration testing.

Publications

P. Kaur, K.J. Dana, and G.O. Cula. From photography to microbiology: Eigenbiome models for skin appearance. In *Computer Vision and Pattern Recognition Workshops (CVPRW), 2015 IEEE Conference on*, pages 1–10, June 2015.

P. Kaur, K.J. Dana, F.A. Romero, and N. Gucunski. Automated gpr rebar analysis for robotic bridge deck evaluation. *Cybernetics, IEEE Transactions on*, PP(99):1–1, 2015.

Posters

Parneet Kaur, Kristin J. Dana, Gabriela Oana Cula. *From Photography to Microbiology: Eigenbiome Models for Skin Appearance*. BioImage Computing Workshop, IEEE conference on Computer Vision and Pattern Recognition (CVPR). (June 2015)

Parneet Kaur, Kristin J. Dana, Francisco A. Romero, Nenad Gucunski. *Computer vision for automated bridge deck evaluation from Ground Penetrating Radar Scans*. 3rd GNY Area Multimedia and Vision Meeting, The City College of New York, New York, USA. (June 2013)

Parneet Kaur, Prateek Prasanna, Kristin J. Dana. *Computer Vision for automated bridge deck inspection*. 7th Annual Perceptual Science Forum, Rutgers University. (May 2013)

Parneet Kaur, Prateek Prasanna, Kristin J. Dana. *Applications of Computer Vision in Civil Engineering*. First Multimedia and Vision Meeting for the Greater New York area, Stevens Institute of Technology New York, USA. (Feb. 2012)

Parneet Kaur, Prateek Prasanna, Kristin J. Dana. *Real Time Hand Gesture Recognition and Blink Detection*. Rutgers Day-2010 (with demonstration). (Apr 2011)

Technical Skills

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|-----------------------------|---------------------------------|
| ○ Programming: | C, C++, MATLAB |
| ○ Open Source Libraries: | OpenCV |
| ○ IDE: | Visual Studio, XCode |
| ○ Configuration Management: | Subversion, Rational Clear Case |

Awards

- Team member recipient of the 2014 Charles Pankow Award for Innovation awarded by the American Society of Civil Engineers (ASCE) for the development of RABIT project.
- Graduate Assistantship (2014-2016), Rutgers University, funded by Johnson & Johnson.
- Graduate Assistantship (2012-2013), Rutgers University, funded by Federal Highway Administration.
- Teaching Assistantship (Spring 2012, Summer 2013), Department of Electrical and Computer Engineering, Rutgers University.

Extracurricular Activities

- Internal Vice President, Society of Women Engineers (SWE) Grad chapter at Rutgers. (Nov 2015 - present)
- Mentor for 1000 Girls, 1000 Futures program, by Global Stem Alliance and New York Academy of Sciences. (Sep 2015 - present)
- Coached a 7th grade girl for a national level competition organized by ProjectCSGIRLS, for which she received an honorable mention. (Spring 2015)
- Mentored a high school girl as the team leader for The Academy at Rutgers for Girls in Engineering & Technology (TARGET) program at Rutgers. (Summer 2015)