Ajjen Joshi

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Area of Specialization

Analysis of spatio-temporal human signals using computer vision and machine learning

Education

Boston University, Boston, MA

Ph.D. student, Computer Science *current*

- Advisors: Dr. Margrit Betke and Dr. Stan Sclaroff

M.S., Computer Science Aug 2014

- Thesis: *A Random Forest Approach to Segmenting and Classifying Gestures*
- Advisors: Dr. Margrit Betke and Dr. Stan Sclaroff
- GPA: 3.9/4.0

Connecticut College, New London, CT

B.A., Computer Science and Architectural Studies (Double Major) May 2012

- Minor in Mathematics and Certificate in Arts and Technology
- Thesis: *Real-time Facial Animation by Gesture Imitation*
- Advisor: Dr. Ozgur Izmirli
- GPA: 3.96/4.0 *Summa Cum Laude*

St. Xavier's School, Kathmandu, Nepal

High School Diploma May 2007

- Rank: 1/108

Honors and Awards

Boston University Computer Science Outstanding Teaching Fellow Award (2015), Phi Beta Kappa (2012), Architectural Studies Award for Outstanding Senior (2012), Winthrop Scholar, Connecticut College's highest academic honor (2011), Recipient of Keck Research Grant (2010)

Relevant Coursework

Graduate

- Machine Learning, Image and Video Computing, Computer Graphics, Computer Networks, Data Mining, Randomized Algorithms and Computation

Undergraduate

- Web and Mobile Computing, Artificial Intelligence, Multimedia Processing, Database Systems, Graphics and Virtual Environments

Skills

Programming

- Java, Python, C++, Matlab, HTML/CSS, JavaScript, PHP, MySQL, Processing

Other

- **Animation and Motion Capture:** Autodesk Maya, Motionbuilder; Blender; **Design:** Adobe Photoshop, Illustrator, InDesign; **Film:** Adobe Premiere, FinalCut

Research Experience + Publications

[1] Ajjen Joshi, Soumya Ghosh, Stan Sclaroff, Hanspeter Pfister. **Hierarchical Bayesian Neural Networks for Personalized Gesture Recognition**. *Current.*

[2] Ajjen Joshi, Sarah Gunnery, Theresa Ellis, Linda Tickle-Degnen, Margrit Betke. **Predicting Active Expressivity in the Face**. *Current.*

[3] Diane Theriault, Ajjen Joshi, Nathan Fuller, Margrit Betke. **FlockOpt: An Optimization-based Model for Simulation of Collective Motion**. *In submission to SIGGRAPH 2016.*

[4] Huy Le, Ajjen Joshi, Margrit Betke. **b3.js: A Library for Interactive Virtual Reality Web 3D Graphs**. *In submission to VR 2016.*

[5] Ajjen Joshi, Camille Monnier, Margrit Betke, Stan Sclaroff. **Comparing Random Forest Approaches to Segmenting and Classifying Gestures**. *In submission to IMAVIS.*

[6] Andrew Kurauchi, Ajjen Joshi, Wenxin Feng, Carlos Morimoto, Margrit Betke. **EyeSwipe: Dwell-free Text Entry Using Gaze paths**. *To appear in CHI 2016.*

[7] Ajjen Joshi, Camille Monnier, Margrit Betke, Stan Sclaroff. **A Random Forest Approach to Segmenting and Classifying Gestures**. IEEE International Conference on Automatic Face and Gesture Recognition (AFGR), 2015. *Oral.*

[8] Ajjen Joshi, Bridget Baird, Ozgur Izmirli. **Developing a Tool for Dance Motion Synthesis**. Biennial Symposium on Arts and Technology, 2012. *Oral.*

Work Experience

Disney Research | Cambridge, MA
Research Intern — Summer 2015
- Implemented prototype system for performing gesture recognition from glove sensor data and explored development of subject-specific hierarchical Bayesian classifiers. Advised by Dr. Hanspeter Pfister, Dr. Soumya Ghosh

Ammerman Center for Arts and Technology | New London, CT
Animation and Motion Capture Technician — Fall 2010 - Spring 2012
- Helped students with computer animation projects, and assisted with capturing body motions using an eight-camera motion capture setup.

Brown University | Providence, RI
Student Intern — Summer 2011
- Created interactive multimedia installations in Max/MSP/Jitter using the Microsoft Kinect. Advised by Dr. Todd Winkler.

Teaching Experience

Teaching Fellow

- Image and Video Computing (Graduate course in computer vision) — Fall 2014
  Rating: 4.82/5 (rated by 22 students)
- Application Programming (Introductory course in programming) — Fall 2013
  Rating: 4.43/5 (rated by 44 students)
- 3D Game Design (Introductory course in game design) — Spring 2013