Ahmad Humayun

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Achievements

Microsoft Research Project Prize for best MSc. Computer Graphics, Vision and Imaging thesis at UCL (2010).

BBC Best Overall Student Prize in MSc. Computer Graphics, Vision and Imaging at UCL (2010).

Software Design Finalist for **Microsoft Imagine Cup 2007 Korea**. The project on Automated Video Recording of Lectures (AVRiL) was selected to represent Pakistan for the first time in this prestigious invitational.

Mentor Graphics Project Award for AVRiL - best BSc. senior year project (2007).

Education

Georgia Institute of Technology Aug. '11 - (to date)
Computer Science PhD. candidate, School of Interactive Computing

University College London (UCL) Sept. '09 - Sept. '10
MSc. Computer Graphics, Vision and Imaging - *Distinction*

Lahore University of Management Sciences (LUMS) Aug. '03 - July '07
BSc. (Hons.). Computer Engineering (Major) - *High Merit*

Professional Experience

Georgia Institute of Technology *Graduate Research Assistant*, Computational Perception Lab. Aug. '11 - (to date)

Microsoft Research, Redmond *Research Intern*, Multimedia, Interaction, & Communication group May '14 - July '14

The University of Warwick *Research Associate*, Dept. of Computer Science Sept. '10 - Dec. '10

Lahore University of Management Sciences *Research Associate*, Dept. of Computer Science Jan. '07 - July '09

MobileWeaver ApS *Junior Software Developer*, Technical Department March '08 - Jan. '09

Selected Publications

RIGOR: Recycling Inference in Graph Cuts for generating Object Regions. *CVPR* - June '14. cpl.cc.gatech.edu/projects/RIGOR/

Video Segmentation by Tracking Many Figure-Ground Segments. *ICCV* - Dec '13. tinyurl.com/opl4rjs

Learning a Confidence Measure for Optical Flow. *IEEE TPAMI* - May '13. tinyurl.com/pw76l9g

RAMTaB: Robust Alignment of Multi-Tag Bioimages. *PLoS ONE* - Feb. '12. tinyurl.com/otm3gly

Learning to Find Occlusion Regions. *CVPR* - June '11. visual.cs.ucl.ac.uk/pubs/learningOcclusion/

Research Projects

Optimization for Object Segmentation at Georgia Institute of Technology (as *PhD. student*)
Research on combinatoric optimization techniques for object segmentation in videos and images. Tools: Matlab, C++

Crowd Tracking with Multiple Depth Sensors at Microsoft Research
Developed a large area, crowd tracking system by fusing data from multiple depth sensors. Tools: Kinect SDK, C++

Occlusion Resolution and Tracking using Superpixels at UCL (*MSc. Thesis*)
Worked on a supervised learning method to detect regions of occlusion in a two frame sequence. Tools: Matlab

Tracking Techniques using Object's Shape Cues at LUMS
Researched on tracking techniques for accurate generation of trajectories using object's non-rigid shape descriptors, resilient to occlusion. This was partly funded by NSF. (www.cc.gatech.edu/~ahumayun/crspd.html) Tools: Matlab

Molecular Pattern Analysis of Cancerous Colon Cells at The University of Warwick
A multi-disciplinary project for the detection of cancerous tissue. We developed registration and non-linear embedding techniques for analysis of tissues from a multidimensional imaging process. Tools: Matlab

Improvements in Google's MapReduce Architecture at LUMS
Research enabling MapReduce to run speculatively on skewed input data. (tinyurl.com/q3detyg) Tools: Python, Hadoop

Automated Video Recording of Lectures - AVRiL at LUMS (*senior year project*)
Developed an automated *director* that captures a multi-camera lecture environment. (avril.sproj.com) Tools: OpenCV

Skills & Interests

Proficient in Matlab, C++, Python, OpenCV | Rock climbing, photography, traveling, solving puzzles, and cycling.