

# Ahmad Humayun

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## AWARDS & ACHIEVEMENTS

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**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.

## EDUCATION

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**Georgia Institute of Technology** - Ph.D. CS, School of Interactive Computing Aug. '11 - April '18

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

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

## PROFESSIONAL EXPERIENCE

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**Georgia Institute of Technology** *Graduate Research Assistant*, Computational Perception Lab. Aug. '11 - April '18

**Facebook AI Research, Menlo Park** *Research Intern* with Manohar Paluri and Piotr Dollár May '15 - July '15

**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

## SELECTED PUBLICATIONS

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**The Middle Child Problem: Revisiting Parametric Min-cut and Seeds for Object Proposals.** *ICCV* - Dec. '15. [rehg.org/poise](http://rehg.org/poise)

**RIGOR: Recycling Inference in Graph Cuts for generating Object Regions.** *CVPR* - June '14. [tinyurl.com/l16oocq](http://tinyurl.com/l16oocq)

**Video Segmentation by Tracking Many Figure-Ground Segments.** *ICCV* - Dec. '13. [tinyurl.com/opl4rjs](http://tinyurl.com/opl4rjs)

**Learning a Confidence Measure for Optical Flow.** *IEEE PAMI* - May '13. [tinyurl.com/pw76l9g](http://tinyurl.com/pw76l9g)

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

**Learning to Find Occlusion Regions.** *CVPR* - June '11. [visual.cs.ucl.ac.uk/pubs/learningOcclusion/](http://visual.cs.ucl.ac.uk/pubs/learningOcclusion/)

**Myosin Motors Drive Long Range Alignment of Actin Filaments.** *J. of Bio. Chemistry* - Feb. '10. [tinyurl.com/p52xt48](http://tinyurl.com/p52xt48)

## RESEARCH PROJECTS

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**Video Object Detection** at Georgia Institute of Technology (*Ph.D. thesis*)

Currently researching on combining motion and appearance cues for localization in video. The goal is to develop deep architectures for generating proposals amenable for detecting and tracking objects. Tools: Lua Torch, Python, C++

**Incremental Learning Inspired by Developmental Psychology** at Georgia Institute of Technology (*Ph.D. thesis*)

Introduced an incremental learning paradigm where the learner sees a streaming set of concepts without any labeling. This is supported by a novel data-generator which can produce any number of synthetic videos of objects. Tools: PyTorch

**Optimization for Object Segmentation** at Georgia Institute of Technology (as *Ph.D. student*)

Research on combinatoric optimization techniques for object segmentation in videos and images. Tools: MATLAB, C++

**Video Supervision for Generating Video Proposals** at Facebook AI Research

Video proposals by unsupervised discovery of objects in large scale video datasets. Tools: MATLAB, Python, 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++

**Detecting Occluded Regions** 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

Tracking for accurate trajectory generation using non-rigid shape descriptors. ([ahumayun.com/crspd](http://ahumayun.com/crspd)) Tools: MATLAB

**Molecular Pattern Analysis of Cancerous Colon Cells** at The University of Warwick

Detection of cancerous tissue by non-linear embedding of multidimensional microscopy images. Tools: MATLAB

**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](http://avril.sproj.com)) Tools: OpenCV

## SKILLS & INTERESTS

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*Proficient in* Python, Lua, C++, MATLAB, Torch, OpenCV | Rock climbing, solving puzzles, and cycling.