

# OTKRIST GUPTA

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## Education

**Massachusetts Institute of Technology – Ph.D. Candidate from MIT Media Lab** (September 2014 - Present)

- Coursework – Computational Photography, Algorithms and Social Networks
- Research Assistantship in *Camera Culture* with Prof. Ramesh Raskar, focusing on novel imaging techniques
- Awarded **Masters of Science in Media Arts and Sciences** from MIT Media Lab in August 2012

**Indian Institute of Technology Delhi – B. Tech in Comp. Science and Engineering** Rank #1, 9.6/10.0 (2009)

- Coursework (selected) – Data structures, Analysis and Design of Algorithms, Programming Languages
- Awarded **President's Gold Medal** for highest academic achievement in IIT among all graduating students

## Professional Experience

**Google – Software Engineer** May 2013 - August 2014

- Developed new speech infrastructure for Google 'now' team to improve the quality of voice responses
- Developed google now actions such as "What's on my Chromecast?" featured in **Google I/O 2014**

**LinkedIn – Software Engineer** June 2012- May 2013

- Architect and owner of recruiter *typeahead* service to provide ultrafast searches over millions of member names
- Worked in a four people team to develop *CheckIn* app for sourcing millions of job applicants all over the country
- Built a notifications and alerts platform using *Hadoop* to store and retrieve information on a cluster

**Tower Research Capital LLC - Infrastructure Developer** 2009-2010

- Developed servers (in C++) for trading and market data acquisition on LSE, NYSE Euronext and other exchanges
- Designed and developed UI (Django and MySQL) to administer trader risk limits and positions
- Developed a library of scripts to track positions, check database, send alerts, and debug server messages

**Virtual Reality Applications Research Team (VIRART), University of Nottingham** 2007

- Member of "Virtual Klub" project team, aimed towards developing software aids to impart music education
- Developed a 3D interactive UI in Java to teach children music. Performed *user studies* to make it more affective

## Academic Projects

**Gesture recognition and tracking using Ultra Wide Band imaging methods** 2014-present

- Used machine learning techniques in Wi-Fi spectrum to detect and classify gesture through walls
- Developed techniques for high precision tracking using continuous wave methods – (UIST 2015)

**Imaging algorithms for facial expression recognition** 2010-2012

- Developed new algorithms for classification of face videos using auto-encoders and deep convolutional neural nets
- Determination of physiological signals such as heart rate using thermal imaging and multi-spectral techniques

**Recovering 3D shape Around a Corner using Ultra -Fast Time-of-Flight Imaging** 2010-2012

- Gave the mathematical proof of existence and uniqueness of solution for around the corner 3D shape problem
- Developed an iterative fixed point algorithm for around the corner 3D imaging using time of arrival data of photons
- Co-invented back projection based algorithm for looking around the corners in 3D (**patent submitted**)
- Publication in 2 esteemed journals - **Nature Communication** (2012) and **Optics Express** (2012)

## Extra-Curricular Activities

- Semi-Finalist in MIT 100K (founding member *Convexic* – job matching for companies and users, now *BeanSprock*)
- Bronze Level member at MIT Ballroom Dance Team (inter collegiate - Latin and Standard dance styles)

## Scholastic Achievements and Awards

- Awarded Rajiv Bambawale, B.N. Bhardawaj, Raman Subramaniam awards for academic excellence in IIT
- Secured percentile of 99.4 in CAT out of 2,50,000, and accepted into **IIM** Ahmedabad and Bangalore (2009)