

OTKRIST GUPTA

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Education

Massachusetts Institute of Technology – MS Candidate from MIT Media Lab 4.96/5.00 (June 2012)

- Coursework – Optimization Methods, Computational Photography, Advanced Algorithms, Machine Learning
- Research Assistantship in *Camera Culture* with Prof. Ramesh Raskar, focused on novel imaging techniques using time of flight methods, futuristic 3D displays and projectors

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
- Technical Skills and platforms used: C++, C, Java, Python, MATLAB, JavaScript

Professional Experience/Internships

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

Yahoo! Software Development India Pvt. Ltd –Summer Intern 2008

- Used dynamic programming for automated re-annotation of web pages (for use in Yahoo! Shopping)
- Developed XSLT and Java based software for annotation transfer across different DOMs of web pages

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

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

- Gave the mathematical proof of existence and uniqueness of solution for around the corner 3D shape problem
- Invented algorithm for around the corner 3d imaging using time of arrival data of photons (**patent** submitted)
- Publication in *Nature Communication* (submitted for review) and thesis topic

Partially coherent ambiguity functions for depth variant 3D display 2010-2011

- Invented algorithm for decomposing 3d ambiguity function matrix into single rank phase only modes
- Publication in ‘*Progress In Electromagnetics Research Symposium*’ (PIERS 2011)

Non Photorealistic Artistic Rendering of Videos 2008-2009

- Developed a novel simulation model for paint strokes which incorporated color content, fiber pressure etc.
- Artistically rendered videos using computer generated water color and brush stroke modeling

Framework to make intelligent SIP proxies using rich presence 2007

- Modified SIP server (C++) to rout calls to appropriate device, conditioned by user location and preferences
- Designed and implemented (in MySQL, PHP) a framework for storing and routing VoIP calls to optimal location

Extra-Curricular Activities

- Semi-Finalist in MIT 100K (team *Convexic* – job matching between companies and users, now *JobSprocket*)
- Bronze Level member at MIT Ballroom Dance Team (Latin and Standard dance styles). Competed for MIT in inter collegiate dance competition at Harvard and Columbia, secured place in semifinals and quarterfinals respectively

Scholastic Achievements and Awards

- One of top 20 nation-wide finalists in prestigious Aditya Birla Scholarship Award (2005)
- Awarded Rajiv Bambawale, B.N. Bhardawaj, Raman Subramaniam awards for academic excellence in IIT