ANDREA COLAÇO
Senior Hardware Engineer | Google, Inc. | andreacolaco@google.com

EDUCATION

Massachusetts Institute of Technology (MIT), Cambridge, MA GPA 5.0/5.0 Sept 2010 – May 2014
PhD in Media Arts and Sciences
Thesis Title: Compact and Low-Power Computational 3D Sensors for Gestural Input.
Advisors: Prof. Vivek Goyal, Chris Schmandt.

Massachusetts Institute of Technology (MIT), Cambridge, MA GPA 5.0/5.0 Sept 2008 – June 2010
Master of Science in Media Technology
Thesis Title: An Auditory Environment for Co-presence in Television Viewing.
Advisor: Prof. Chris Schmandt.

Birla Institute of Technology and Science (BITS), Pilani, India GPA 9.57/10 Aug 2003 – June 2007
Bachelor of Engineering (Hons.) Electrical and Electronics
Top 2% of 900 candidates, class rank 6 out of 120.
Thesis Title: Remote Validation of Signed Certificates.
Advisor: Dr. Srinivasan Ramani, HP Labs.

SELECT AWARDS & HONORS

- Finalist, Cartier Women's Initiative Award for women entrepreneurs (top 3 across North America, winner pending). **2014**
- Subject of a documentary supported by Google family foundations, "The Programmers: The Future Makers" (episode 3) documenting 3 generations of women computer scientists. **2014**
- INK-TED fellow. **2013**
- $50K Gold prize winner MassChallenge accelerator program for startups (top 15/1200+ applicants). **2013**
- $100K Grand prize winner, MIT 100K entrepreneurship competition (1st place among 350+ applicants). **2013**
- MIT entrepreneurship competition pitch contest winner (1st of 300+ applicants). **2012**
- Finalist, ACM student research competition, SIGGRAPH (top 5/150 posters). **2012**
- Qualcomm innovation fellowship (top 8/146 national applicants). **2011, 2012**
- Goa fellows award (top 10/500 state-wide applicants). **2010**
- LG Electronics graduate fellowship (top 2/250 candidates). **2009**
- Recipient of Dhirubhai Ambani foundation scholarship (top 3/10,000 applicants). **2003-2007**
- Institute merit scholarship, Birla Institute of Technology and Science (top 10/1000 candidates). **2003**

WORK EXPERIENCE

Google, Inc. **Aug 2014-Present**
Software Engineer
- Inventor and core engineering contributor of low-power user input technology in 2 major upcoming products.
- Algorithm design for key user-facing features enabled in Google's consumer electronic products.

3dim Tech, Inc., Cambridge MA **Oct 2012-July 2014**
Founder and CEO
- Invented and prototyped 3dim's low-power, low-cost 3D motion tracking system for mobile and wearable devices.
- Application and UI integration: designed optimal location, configuration of sensor + interface integration of tracking data.

MIT Media Lab, Cambridge MA **Sept 2008-Mar 2014**
Research Assistant
- Designed, prototyped and demonstrated proof-of-concept gestural interfaces for head mounted displays, smart phones and tablets.
- Designed and conducted human-computer interaction evaluation studies to test feasibility of new user interfaces.
- Experience with rapid prototyping – breadboard level circuit design; fabrication – laser cutting, water-jet cutting.
- Mentored 5 undergraduate researchers at MIT.
- Co-founded and organized Design & Innovation annual workshops to promote hands-on learning among undergraduates.

HP Labs, Palo Alto, CA **June 2012-Aug 2012**
Research Intern
- Designed and implemented denoising algorithms for time-of-flight depth maps through local correction of flying pixels.
- Noise modeling with global regularization for correcting shape distortions that arise from multi-path interference.

Texas Instruments, TI R&D Center, Dallas, TX **June 2011-Aug 2011**
Research Intern
- Implemented a low-complexity method to reconstruct 3D models of objects using stereo images from cell phones using a small number of input views.

General Electric Research, Bangalore, India **Aug 2007-May 2008**
Electrical Engineer, GE Energy

- Designed and developed an automation tool to obtain 2D/ 3D model of the core end of a generator, and to automate the electromagnetic finite element analysis.

HP Labs, Bangalore, India **Jan 2007- Aug 2007**
Research Intern

- Modeled and designed features for a universal multi-functional access interface for information networks through AIOs (All-In-Ones) (patent issued).
- Remote Validation of Signed Certificates: Validation of documents over a GPRS network via cell phones using 2D barcodes.

SELECT PUBLICATIONS

- First-Photon Imaging, A Kirmani, D. Venkatraman, D. Shin, **A. Colaço**, F. Wong, J. Shapiro, V. Goyal, *Science*, Nov 2013.
- Mime: Compact, Low-Power 3D Gesture Sensing for Interaction with Head-Mounted Displays, **A. Colaço**, A. Kirmani, N. Gong, H. Yang, C. Schmandt, and V. Goyal, in *Proc. ACM Symp. on User Interfaces and Software Technology,* 2013.
- Compressive Depth Map Acquisition Using a Single Photon-Counting Detector: Parametric Signal Processing meets Sparsity, **A. Colaço**, A. Kirmani, G. Howland, J. Howell, and V. K. Goyal, in *Proc. IEEE CVPR* 2012.
- CoDAC: A Compressive Depth Acquisition Camera Framework, A. Kirmani, **A. Colaço**, F. N. C. Wong, and V. K. Goyal, to appear in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing*, 2012.
- Exploiting Sparsity in Time-of-Flight Range Acquisition Using a Single Time-Resolved Sensor, A. Kirmani, **A. Colaço**, F. N. C. Wong, and V. K. Goyal, *Optics Express*, vol. 19, no. 22, pp. 21485-21507, October 2011.

SELECT PRESS COVERAGE

- **BBC:** Camera takes 3D photos in the dark **2013**
- **Boston Business Journal:** BBJ Focus: 13 Cool Startups to watch **2013**
- **NewScientist:** Gesture that smartphones can appreciate **2013**
- **Wall Street Journal:** MIT Contest Winner 3dim Brings Gesture Control to Mobile Devices **2013**
- **Xconomy:** Gesture Is the New Touch: A Report from the MIT $100K Competition **2013**
- **Wired:** Augmented Reality: MIT's Compressive Depth Acquisition Camera **2013**

PROGRAMMING SKILLS

- Software: Python, C, MATLAB, Java.