

XI XIONG

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EDUCATION

- Dartmouth College** **09/2015 - 06/2018(expected)**
- Master student in Department of Computer Science
- Tsinghua University, Beijing, China** **09/2012 - 07/2015**
- Master of Engineering in Computer Software, School of Software
 - Tsinghua-Berkeley Global Technology Entrepreneurship Program, School of Economics and Management
- Tsinghua University, Beijing, China** **09/2008 - 07/2012**
- Bachelor of Engineering in Computer Software, School of Software
 - Second Bachelor of Arts in Digital Entertainment Design, Academy of Arts and Design

HONORS AND AWARDS

- **1st Prize** - Scholarship of Tsinghua-Guanglianda, 2014
- **Stars of Tomorrow** - awarded for excellent participation in MSR Asia Internship Program, 2014
- **3rd Prize** - Challenge Cup of Tsinghua University, 2010
- **2nd Prize** - National College Physics Contest, 2009
- **2nd Prize** - Jiangxi Province Chapter of Chinese Mathematical Olympiad, 2007
- **1st Prize** - Jiangxi Province Chapter of Chinese Physics Olympiad, 2007
- **1st Female** - Jiangxi Province Chapter of Chinese Physics Olympiad, 2007

SKILLS

- **Programming:** Android, Java, Python, C/C++, C#, Cuda, Assembly language, XML, SQL Server.
- **Web:** JavaScript/JQuery, HTML, CSS, AJAX.
- **Tools & Systems:** Matlab, L^AT_EX, IDEA, Unity3D, Blender, Eclipse, Visual Studio, Windows, Linux, Maya.

WORK EXPERIENCE

- Research & Teaching Assistant** **Dartmouth College** **09/2015 - 11/2017**
- Researched on localization, wireless measurements, sensor fusion, pose reconstruction, and machine learning.
 - Published several conference and workshop papers. One work about customizing wireless coverage via 3d-fabricated reflectors got covered by a bunch of medias such as TechCrunch, Engadget, and DailyMail and attracted over 500K views on Youtube.
 - Served as a teaching assistant for Problem Solving via Object-Oriented Programming and Computer Networks courses.
- SDE Intern** **Malong Technologies (startup)** **12/2014 - 05/2015**
ProductAI, Advised by *Matthew Scott*
- Built web crawlers to acquire tens of thousands of high-quality fashion images, contributing to a computer vision product that won the highest award at the Microsoft Ventures Beijing Demo Day 2015.
 - Devised a web-based platform to remove watermarks for image searching accuracy by using image processing and crowd-sourcing tasks.
- RSDE Intern** **Microsoft Research Asia** **11/2013 - 05/2014**
iNav: Crowdsourcing Semantic Indoor Navigation Maps (Android), Advised by *Matthew Scott*
- Participated in developing a smartphone-based crowdsourcing map generation and indoor navigation system, shipped it to customers in the Microsoft Global Security Group.
 - Improved crowdsourcing semantic map generation algorithm, including indoor map structure recognition, conditional random field model construction, Viterbi algorithm implementation.
 - Cooperated with software engineers from Innovation Engineering Group, UI designers from Human Computer Interaction Group and researchers from Mobile and Sensing System Group.
- Investment Analyst Intern** **Netease Capital** **03/2013 - 11/2013**
Mobile Game Market Analysis
- Evaluated mobile games by international startup companies vs. available top 10 mobile games. Some mobile games I evaluated as excellent went on to ranking top 20 list in China, such as "The End of School".
 - Developed a mobile game database for efficient inquiry of hundreds of startup founders and mobile games.

PROJECT EXPERIENCE

Reconstructing Hand Poses Using Visible Light

01/2017 - 04/2017

Research Assistant - Dartmouth College

- Proposed quasi-random sampling method to reconstruct 3D hand pose in real time (120Hz) from 2D binary blockage maps generated by a lamp of 288 LEDs and 16 photodiodes.
- Implemented and demonstrated the proposed sampling method is at least five times faster than other sampling techniques such as particle swarm optimization and fixed-step search.

Customizing Indoor Wireless Coverage via 3D-Fabricated Reflectors

09/2015 - 09/2016

Research Assistant - Dartmouth College

- Proposed simulated annealing algorithm guided with gradient descent to search an optimized reflector's shape, which successfully weakens or enhances signals in target area by up to 10 or 6 dB.
- Accelerated the searching by tens of times using kd-tree and simultaneous perturbation stochastic approximation.
- Leveraged NURBS surface to represent shape of a reflector, which greatly reduced computational complexity.
- Covered by a bunch of medias such as TechCrunch, Engadget, and DailyMail, attracted over 500K views on Youtube.

Automating 3D wireless measurements with drones

01/2016 - 04/2016

Research Assistant - Dartmouth College

- Led an undergraduate to implement an automating wireless signal measurement project using a Parrot AR.Drone, conducted the measurement in a 19 m × 13 m indoor area.
- Proposed using Extended Kalman Filter and landmarks to accurately navigate and track the 3D position of a drone indoor.

Fast Single-image-based Building Localization with Smartphone (Android)

04/2014 - 07/2014

Research Assistant - Tsinghua University

- Implemented an Android application to localize a distant unknown building by taking one photo without intricate 3D reconstruction and any database construction, achieved 92.7% building identification accuracy.
- Proposed to reconstruct a 3D partial top view contour of a building from a 2D photo using vanishing point and Manhattan World Assumption.

Personality Analysis with Smartphone (Android)

03/2012 - 07/2012

Research Assistant - Tsinghua University

- Built the model of personality classification based on users' historical location information and behavior pattern by cooperating with students from different departments.
- Developed personality analysis and visualization demonstration KnowThyself on Android platform.

PUBLICATIONS

- Xi Xiong, Justin Chan, Ethan Yu, Nisha Kumari, Ardalan Amiri Sani, Changxi Zheng, Xia Zhou. Customizing Indoor Wireless Coverage via 3D-Fabricated Reflectors. In Proceedings of the 4th ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys '17).
- Tianxing Li (co-primary), Xi Xiong (co-primary), Yifei Xie, George Hito, Xing-Dong Yang, and Xia Zhou. Reconstructing Hand Poses Using Visible Light. In Proceedings of the 2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '17).
- Zhao Tian, Yulin Wei, Xi Xiong, Weinin Chang, Hsinmu Tsai, Kate Chingju Lin, Changxi Zheng, and Xia Zhou. Position: Augmenting Inertial Tracking with Light. 4th ACM Workshop on Visible Light Communication Systems (VLCS '17).
- Ethan Yu, Xi Xiong, Xia Zhou. Automating 3D wireless measurements with drones. In Proceedings of the Tenth ACM International Workshop on Wireless Network Testbeds, Experimental Evaluation, and Characterization (WiNTECH '16). ACM, 2016: 65-72.
- Xi Xiong, Zheng Yang, Longfei Shanguan, Yun Fei, Milos Stojmenovic, and Yunhao Liu. SmartGuide: Towards Single-image Building Localization with Smartphone. In Proceedings of the 16th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc '15). ACM, 2015: 117-126.
- Xi Xiong, Haining Fan. $GF(2^n)$ bit-parallel squarer using generalised polynomial basis for new class of irreducible pentanomials. Electronics Letters. vol.50, no.9, 2014: 655-657.
- Yongjia Wang, Xi Xiong, Haining Fan. $GF(2^n)$ redundant representation using matrix embedding for irreducible trinomials. International Journal of Foundations of Computer Science, 2015.