

# MARK R. MILLER

## CONTACT

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## EDUCATION

**University of Illinois** August 2013 to May 2016

Urbana-Champaign, Illinois • Computer Science

GPA: 3.94/4.0 • National Merit Scholar • James Scholar

C.W. Gear Outstanding Undergraduate Award

## WORK EXPERIENCE

**CS 233 Course Assistant** January 2015 to August 2015

University of Illinois • Champaign-Urbana, IL

- Assisting in discussion section of 30 students
- Developing SPIMbot, a MIPS assembly challenge and combination of final project and classwide competition.
- Provided one-on-one instruction during office hours

**Software Engineering Intern** Feb 2014 to Aug 2015

Horizon Hobby, Inc. • Champaign, IL

- Developing an update to radio controller functionality
- Working continuously with embedded systems

## RESEARCH AND PUBLICATIONS

**Research Assistant** Summer 2015 to present

Prof. David Forsyth • University of Illinois

- Implementing a computer vision system to track a user and projectiles then warning the user through VR
- Using C# and EmguCV and experiencing algorithms such as dense and sparse optical flow and random forest

**M. Miller, T. Reese, A. Modi, L. Angrave.** "Breadth, Depth, and Passion of 'DotStar': Transforming CS Students at Illinois." Poster presented at ICER 2015.

**Senior Thesis** Summer 2015 to Spring 2016

An exposition and reflection on the course model of CS 196.

## VOLUNTEERING

**System Designer** Spring 2016 to present

Student Alumni Ambassadors • University of Illinois

- Create a robust, intuitive, non-technical web application for organizing and matching agencies and volunteers

**President & Publicist** Fall 2014 and Spring 2015

Koinonia Retreat Program • University of Illinois

- Manage 700-person listserv and weekly communications
- Worked with a team of seven to organize and set up four retreats of 25-40 participants.

## PERSONAL PROJECTS

**RealtimeOverlay** Fall 2015

*RealtimeOverlay is an Android app that uses computer vision aided by orientation sensors to align a camera feed in real time.*

- Uses OpenCV and the Android NDK
- Code is at [github.com/MrMallIronmaker](https://github.com/MrMallIronmaker)

**DigitATM** HackMIT, Fall 2015

*DigitATM is a fingerprint-activated ATM simulator built in 24 hours at HackMIT.*

- Developed an algorithm in MATLAB to match pictures of fingerprints

- Received CapitalOne's sponsor prize

**SPIMarena** Spring 2015

*SPIMarena is an online platform to facilitate class competition in SPIMbot, CS 233's final project.*

- Built frontend with PHP and HTML
- Performed competition simulations

**Magic-I** Fall 2013

*Magic-I is a design tool for card stunts for the University of Illinois student section, Block-I.*

- Designed and built the application using Python's TkInter GUI package

- Pitched new program to president of Block-I

## LEADERSHIP

**Co-instructor** Fall 2015 and Spring 2016

CS 196: Freshman Honors

- Recruited a class staff of forty to lead teams of three to five students each

- Drafted several course documents, e.g. course staff policy, teaching tips, presentation tips, and a microlesson template

- Organizing weekly lectures with three to four student presenters

**Project Manager** Spring 2015

CS 196: DotStar (Freshman Honors)

- Led a team of five students developing an Android multiplayer platform game

- Lead meetings and graded performance

- Wrote and presented several 45 minute lectures for around 200 students on the basics of programming, command line tools, data structures, and algorithms.