

# Matthew Zhan

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## EDUCATION

*Bachelor of Engineering*, Electrical and Computer Engineering  
The University of Texas at Austin  
August 2012 - May 2016  
Major GPA: 3.62  
Concentration: Software Engineering

## RELATED COURSES

Software Engineering	Software Design II
Algorithms	Communications
Real-time Operating Systems	Concurrent and Distributed Systems
Computer Architecture	Big Data and Machine Learning
Requirements Engineering	Digital Logic Design
Differential Equations	Linear Systems and Signals
Probability	Discrete Math

## COMPUTER SKILLS

*Languages & Software:* Java, C++, C, Qt Framework, 2D Graphics, UX, Python, MySQL, Assembly, Emacs  
*Operating Systems:* Windows, Linux, OS X  
*Source Control:* GIT

## EXPERIENCE

*Image Processing Engineer* at MetaVi Labs October 2015 - Present  
Austin, TX

- Harmony Platform - Automated Microscopy Analysis
- Improved edge case detection for tube formation assays, reducing the processing time of videos by up to 20 minutes
- Refactored the error logging process into a module that standardized and simplified debugging for existing and future components

*Software Engineer Intern* at Polycom July 2015 - September 2015  
Austin, TX

- Firmware Testing Automation - Visual Statechart
- Developed an open-source, raster graphics editor for hierarchical finite state machines using C++ and the Qt Framework to produce complex and lucid state machine designs
- Designed and implemented a code exporter that converts state machines directly to skeleton C++ class and header files, reducing coding time by up to three hours
- Substantially improved the program by adapting requirements from consultations and meetings with end users
- *Website:* <https://github.com/daviddrell/visualsc>

*Software Engineer Intern* at The Center of Intelligent Spatial Computing for Water/Energy Science (CISC), George Mason University June 2014 - August 2014  
Fairfax, Virginia

- Big Geoscience Data - Cloud Framework
- Simplified analysis of large, cloud-stored geodata files by developing middleware to quickly render geomaps using interpolation algorithms

- Assessed behavior patterns of app-users using GPS data to profile their movement
- Accelerated development progress by regularly exchanging critique in meetings

*Tutor* at The University of Texas at Austin  
Austin, TX

August 2013 - May 2014

- Undergraduate Tutor - Electrical Engineering
- Mentored EE students to hone their knowledge, effectively solve problems, and efficiently study for tests
- Reduced challenging problems as a team of tutors and students, collaborated on thorough and simple strategies for solving problems

## **PUBLICATIONS**

Li Z, Yang C, Jin B, Yu M, Liu K, Sun M, Zhan M, (2015). Enabling Big Geoscience Data Analytics with a Cloud-Based, MapReduce-Enabled and Service-Oriented Workflow Framework, Research Gate, March 12, 2015.

## **PROJECTS**

### **ReQ**

Description: Lead a six-person startup to develop a two-interface mobile application to enhance the dining experience. The idea behind the system is to save time through a specialized communication platform between diners and the restaurant. The diners' phone app connects to their current restaurant's tablet app. The waiter's tablet interface shows a top-down layout of the tables and displays real-time notifications of common diner needs. From the phone app, diners can request an order, their check, refills, new silverware, or a custom message without having to call over a waiter. Additionally, diners can request a table from the app and skip the physical line.

### **Rho**

Description: Developed a 2D platform shooter game built on a custom physics engine. The deep mechanics of the game allow for practically infinite variations of situations from features including gravity, grappling hooks, and over 10 unique physics-based weapons.

### **Kepler Orbit**

Description: Developed a 2D universe simulator physics sandbox that exhibits the effect of gravity between bodies of mass. Programmed additional features for artistic expression, including path tracing and strobe lights. Developed it for both Android and iOS and released it on the AppStore.

*Website:* <https://itunes.apple.com/us/app/kepler-orbit/id508039840?mt=8>

## **HONORS & AWARDS**

Member of UT Engineering Honors Program

Recipient of Charles C. and Lula May Wilson Endowed Scholarship Fund, 2012-2013