# Timothy Clancy

College: 3909 Spruce Street, Philadelphia, PA 19104 • Home: 2 Katherine Road, Rehoboth, MA 02769

(508) 431-6847 • clancyt@seas.upenn.edu • www.rockhopper.us/tim/vr • github.com/TimTinkers

## Education. Honors: 2014 United States Presidential Scholar     GPA: 3.63

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| **University of Pennsylvania** | **Philadelphia, PA** |
| *Masters of Science (MSE) in Computer Science* | May, 2018. |
| *Bachelor of Science (BSE) in Computer Science* | May, 2018. |
| *Minor Concentration in Chinese Language and Culture* | May, 2018. |
| *Richard P. Bailey Scholarship* | 2014, 2015, 2016. |
| *Class of 1976 Scholarship* | 2014. |
| *Internet Web Systems TA for Professor Haeberlen* | Fall 2016, Spring 2017. |

## Skills

Aspiring entrepreneur highly-proficient with multi-threading, parallelism, distributed systems, and decentralized systems.
**Languages:** Java, Solidity, C, JavaScript, Verilog, OCaml, FORTRAN, SQL, PHP, and Mandarin Chinese.
**Technology:** Ethereum, Web3, AWS, Spring, Unreal Engine, Node, OpenGL, Virtual Reality, Mathematica, Rocketry.

## Experience.

**Professional. References and some code samples available on request.** ........................................

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| **Amazon Robotics** | **North Reading, MA** |
| *Software Development Engineer Intern* | May 2017 - August 2017. |

- Developed a distributed error logging and insight platform.
  Used the Spring framework with Java to deploy distributed servlet endpoints responding to a custom Javascript dashboard. Queried data from Amazon Aurora and other AWS services to make a highly-scalable platform for collecting millions of error and query messages in real time. Presented, planned, and documented project to senior management.

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| **Electronic Arts** | **Redwood Shores, CA** |
| *Data Visualization Intern* | May 2016 - August 2016. |

- Developed a highly-scalable web-based heatmap analysis tool.
  Used JavaScript, Node.js and Leaflet to construct a tool for visualizing location-based game event data with video streaming. Queried data from EA's Hive storage and wrote a Java backend to process data for local storage in SQL via JDBC. Communicated with and gathered feature requests from future users and groups within EA. Effectively managed long-term programming project with documentation for future support of the tool.

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| **Wavelet Technologies, Inc.** | **Attleboro, MA** |
| *Intern in Software Development* | May 2015 - August 2015. |

- Embedded device development work on LifeCuff Technologies clinical trial prototype.
  Worked in C programming a prototype medical device designed to lessen reprofusion injury following a heart attack. Improved device's display capabilities, collected data from trial runs to inform algorithm development, and implemented serial communications with Mathematica to produce CDF capable of visualizing trial data in easily-digested graph form.
- Development in Ubuntu environment for mathematical software.
  Setup a VM image of an Ubuntu 14 build for distribution. Modified scientific FORTRAN program NEC-4 to support custom C harness for multi-threaded capabilities.

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| *Data Analysis Intern* | June 2013 - September 2013. |

- Compiled meteor shower photographs.
  Took long-exposure photos of Perseid meteor shower and sorted through them for evidence of trails, then compiled data into a company report. Also trained in using Mathematica.

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| **United Nations Association of Greater Philadelphia** | **Philadelphia, PA** |
| *Webmaster* | August 2014 - present. |

- Took on the role of maintaining the organization's Wordpress-based website.
  Updated the site and all associated plugins through two major versions of Wordpress. Created custom content-management solution for adding upcoming events for the organization. Meet regularly with members of the organization and incorporate their feedback into the site's design using a Mantis bug tracker to track open tickets. Proficient with setup and management of LAMP stack in Ubuntu as well as front-end web development.

**Bankers Advisory, a CliftonLarsonAllen LLP Division**                                          **Belmont, MA**
*Webmaster and Research Intern*                                                      June 2014 - August 2014.
- Maintained the company website, which used a custom content management system.
  Used PHP and MySQL to create pages for employees to upload and track case files. Created a cron job to regularly backup website data. Automated data entry for the company by implementing web-based Excel parser. Researched sources of mortgage fraud on a state-by-state basis and compiled the data into a compendium on the company website. The compendium automatically updates itself with new resources as employees upload new case files.

**School. Code available on request.** ...........................................................................

**Tortoise, a Search Engine**

*A search engine from scratch in Java*                                                              CIS 555

Consisting of a web-crawler far more sophisticated than "Charlotte," a MapReduce framework implemented using Java servlets, and an interface with AWS services, this search engine proved to be a success. The project took one month and comprehensively covered topics such as building an inverted index, implementing an HTTP web server and servlets from scratch, and the parallelism required for a highly-scalable and efficient search engine.

**Processor from Scratch**

*A superscalar pipelined processor in Verilog*                                                         CIS 371

Used Verilog and the careful drafting of schematics as part of a three man group to design an efficient processor from the gate level. The processor was implemented, tested, and functioned on a Zedboard.

**Personal.** ...................................................................................................

**Palm**

*Ethereum/Unreal Engine Bridge*                                                          github.com/TimTinkers/Palm

Palm uses Web3j and a Java networking layer to show the Unreal Engine interacting with a Ethereum. Together the Unreal Engine, an ERC-721 smart contract, and a Java middle networking layer form a system capable of bridging the Unreal Engine's robust visualization tools and the decentralized computing benefits of Ethereum.

**Dexio**

*Enhanced Supply-chain Tracking in the Diamond Industry*                           github.com/dexioio/DiamondRegistry

A startup offering an Ethereum-based diamond registry. This application uses ERC721 smart contracts as assets to control write permissions to an IPFS document store. With this system for transferable write permissions in place, we provide a product for securely sharing a verifiable record of diamond data.

**Web, an Oculus Rift Internet Visualization Application**

*Unreal Engine Virtual Reality Application using Java and WAMP Stack*                         github.com/TimTinkers/Web

An application for the Oculus Rift created using the Unreal Engine's blueprint system. Queries a MySQL database through the ArrestDB RESTful API for data gathered by my Java web-spider, "Charlotte." Displays this data as an interactive map of the internet around the user. An explanation of its use in conjunction with Charlotte is described in this video: https://youtu.be/GpFVWFUHLcI.

**Charlotte, a Java web-spider**

*Java-based Web-spider Working on a WAMP Stack*                                   github.com/TimTinkers/Charlotte

Brainstormed as part of my participation in a team at PennApps Fall 2015, the University of Pennsylvania's "hackathon" programming competition. Further acknowledgments are recorded in the repository, and all breadth-first seach code implemented is my own work. Charlotte begins recording the structure of the internet with any seed URL, and stores in graph form links from that URL into a MySQL database. An explanation of its use in conjunction with "Web" is described in this video: https://youtu.be/GpFVWFUHLcI.

**Hilbert Curve Generator**

*OpenGL Fractal Generation Program*                                              github.com/TimTinkers/Hilbert-Curve

An OpenGL program to generate figures of progressive steps in the Hilbert Curve fractal. Built using the LibGDX engine, with simple camera controls to help with viewing the figures.

**Captain of Nationally-ranked Rocketry Team**

*Captain of Team America Rocketry Challenge Team*                        rocketcontest.org/competition-results/2014-results

Since 2009, I served as a member of the Wavelet Technologies rocketry team. In 2013 and 2014, the team advanced to the national level, reserved for the top 100 teams in the country. In 2014, I was team captain and responsible for pre-launch rocket preparations. We placed 55th in the competition that year.