

# David J. Watkins

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## Education

**Columbia University** | Fu Foundation of Applied Science

**B.S. in Computer Science** with Computer Systems Track | Class of 2016 | 3.6 GPA | 3.7 GPA in Major

**M.S. in Computer Science** with Computer Systems Track | Class of 2017 | CA Fellow | 4.0 GPA

**Ph.D. in Computer Science** in Computational Robotics | Proposed completion 2021

Coursework: Tech Entrepreneurship, Database Implementation, Operating Systems, Networking Principles, Database Systems Implementation, GPU Computing, Programming Languages and Translators, Analysis of Algorithms, Embedded Systems, Computer Graphics

**Marian High School** | Class of 2012 | Salutatorian | 4.0 GPA | Class President

## Publications

**Reasoning about 3D Geometry with Vision and Touch** Jacob Varley, David Watkins, and Peter Allen IROS 2018

- Developed an architecture that incorporates depth and tactile information to create rich and accurate 3D models useful for robotic manipulation tasks.

## Research

**Research in HRI using an sEMG** New York, NY January 2016-Present

- Worked with Professor Peter Allen at Columbia University and Dr. Joel Stein at the Columbia Medical Center to determine the effectiveness of a HitL UI for patients with spinal cord injuries using a series of novel input devices
- A comprehensive report of the research can be found at: [http://davidwa.tkins.me/files/2017\\_fall\\_HRIfAG.pdf](http://davidwa.tkins.me/files/2017_fall_HRIfAG.pdf)

**Research in Bit Width Resolution** New York, NY January 2016-December 2016

- Worked with Professor Stephen Edwards at Columbia University to add **Z3**'s SMT framework to an existing compiler project in order to resolve variable bit widths at compile time
- A comprehensive report of the research can be found at: [http://davidwa.tkins.me/files/2016\\_spring\\_PCSS.pdf](http://davidwa.tkins.me/files/2016_spring_PCSS.pdf)

**Research in Shape Completion** New York, NY September 2016-Present

- Worked with Professor Peter Allen in the CURG lab at Columbia University to optimize an existing platform utilizing **CUDA**
- Evaluated the ability to utilize a semantic pre-processor to identify objects in a scene to be completed using the existing tool
- A comprehensive report of the research can be found at: [http://davidwa.tkins.me/files/2016\\_fall\\_OSCP.pdf](http://davidwa.tkins.me/files/2016_fall_OSCP.pdf)

**Research in Data Visualization** New York, NY September 2015-December 2015

- Worked with Professor John Kender at Columbia University to provide visualization of the correlation between visual and textual memes in online video data and provided an analysis on the most effective ways of visualizing co-clustered data
- A comprehensive report of the research can be found at: [http://davidwa.tkins.me/files/2015\\_fall\\_VCCM.pdf](http://davidwa.tkins.me/files/2015_fall_VCCM.pdf)

**Research in the Production of Litecoin ASICs** New York, NY January 2014-May 2014

- Cooperated with Professor Simha Sethumadhavan on the feasibility of producing Litecoin Mining ASICs
- Independently designed all of the ASIC schematics, performed cost-benefit analysis of the ASIC and maintained knowledge on which crypto-currencies were most profitable at any time. The report can be found at: [http://davidwa.tkins.me/files/2014\\_spring\\_SMWA.pdf](http://davidwa.tkins.me/files/2014_spring_SMWA.pdf)

**LIRSM** New York, New York September 2014-January 2015

- Responsible for developing web application in **Node.js** and **Mongo** to easily add and retrieve information from csv files
- Participated in IT work and assisted with sessions in informing individuals on using **UNIX**
- Developed strategies to acquire study data more efficiently and help audit costs on services

## Professional Memberships

**ACM** 2016-Present

**IEEE** 2016-Present

## Awards, Honors, and Leadership

**Dean's List** Columbia University Spring 2013, Spring 2015, Spring 2016

**International House Member** Fall 2016-Present

Linkedin: <https://www.linkedin.com/in/davidwatkinsj> | Facebook: <https://facebook.com/Davidwme> | Github: <https://github.com/DavidWatkins> | Twitter: [https://twitter.com/davidw\\_me](https://twitter.com/davidw_me)

<b>CA Fellowship</b> Columbia University	Fall 2016
- Awarded to students who show an inclination towards teaching	

<b>Goldman Sachs Code Golf Champion</b>	Summer 2016
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## Professional History

<b>Goldman Sachs</b> New York, NY	June 2016-August 2016
<ul style="list-style-type: none"> <li>- Worked in Margin Technology to prioritize calculations using a graph DBMS and provided an interface to adjust the prioritizations</li> <li>- Developed in <b>Java</b> and <b>Angular.js</b> to build both the database queries and the user experience</li> </ul>	
<b>Goldman Sachs</b> New York, NY	May 2015-August 2015
<ul style="list-style-type: none"> <li>- Worked in Valuations Technology to rebuild an FVA Gating Tool which allowed Operations Users to give clients info statements</li> <li>- Developed in <b>Angular.js</b> and <b>Slickgrid</b> to build a convenient user experience while collaborating with fellow interns</li> </ul>	
<b>Streakfire LLC</b> Wayland, MA and Dorado, PR	June 2014-September 2014
<ul style="list-style-type: none"> <li>- Producing an ad campaign in Puerto Rico to promote a technical accelerator to help create jobs for graduated college students</li> <li>- Coordinating with local government to leverage their expertise in publicity and existing infrastructure</li> </ul>	
<b>Course Assistant</b> New York, NY	September 2013-Present
<ul style="list-style-type: none"> <li>- Responsible for grading assignments and assisting students during office hours</li> <li>- CA'd Programming Languages and Translators, Objected Oriented Programming and Design, and Fundamentals of Computer Systems</li> </ul>	

## Technical Skills

### Programming Languages:

- Java, C/C++, PHP, Node.js, HTML5 (+Bootstrap), CSS, Javascript (+jQuery+AngularJS), Python, MySQL, Bash, Ruby (+Rails), VHDL

### Operating Systems, Applications, and APIs

- Proficient in Linux, Unix, and Windows (Preferred desktop)
- Apache, Git, Eclipse, ftp, ssh, Paint.net, Notepad++, Brackets, VMWare Workstation, SugarCRM, Chocolatey
- Familiar with Twitter, Tumblr, and Firebase APIs. Knowledge of Android Application Development

## Extracurricular Activities

United Citizens Brigade Improvisational School	2017-Present
ADI at Columbia University	2012-2016
Ballroom dance	2014-2015
Bartending	2015
Res. Inc.	2012-2014

## Volunteer Work

<b>Pine St. Inn</b>	Fall 2010 – Spring 2012
<ul style="list-style-type: none"> <li>- Volunteer soup kitchen in Boston, MA</li> <li>- Over 25 hours of volunteer service</li> </ul>	
<b>Sisters of St. Joseph</b>	Fall 2010 – Spring 2012
<ul style="list-style-type: none"> <li>- Volunteer nursing home for retired nuns in Cambridge, MA</li> <li>- Over 25 hours of volunteer service through entertaining and assisting retirees</li> </ul>	