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William Falk-Wallace
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EDUCATION

Columbia University, Columbia College, *New York, NY* **B.A. Candidate 2014**
Major: Computer Science; *Concentration:* Physics
Grade Point Average: Computer Science Major: 3.55; *Overall:* 3.41
Relevant Coursework: Advanced Programming in C, C++, and UNIX; Advanced Data Structures; Cryptography and Coding Theory; Combinatorics and Graph Theory; Computer Networks; Programming Languages and Translators; Artificial Intelligence; UI Design

Phillips Academy Andover, *Andover, MA* **2006 – 2010**
Honors Student; AP Scholar with Distinction; SAT 99th percentile

WORK EXPERIENCE

Nomis Solutions, Optimization Software Engineer, *San Bruno, CA* **Summer 2013**

- Worked with Optimizations and Engineering teams to develop market financial pricing optimization software
- Developed caching scheme to halve total computation time
- Modified computation parameters schema to incorporate expanded variable set enabling more efficient optimization
- Documented computational software data and provided business-friendly interpretation to be used in software demonstrations

Columbia University, Teaching Assistant for Honors Introduction to Computer Science, *New York, NY* **Spring 2013**

- Support student learning through weekly lectures, office hours, one-on-one meetings, and online forums
- Aided in the design of homework and practice problems and grading of exams and homework for over seventy students

Condé Nast, Mobile App Product Development Intern, *New York, NY* **Summer 2012**

- Created several mobile app concepts, developed functionality, user interface, and marketing and business strategies
- Participated in cost and design meetings with third-party application design and development firms
- Formally presented app concept and design to magazine brands for review and funding

Columbia University, Kim Group, Research Assistant, *New York, NY* **2011 – 2012**

- Measured thermopower in Graphene on BN samples in Helium cryostasis chamber
- Worked frequently in a clean room environment, involving use of strong acids and precision measurement and fabrication equipment including AFM, SEM, e-beam evaporator and cryostat control and measurement software

ATHLETICS

Columbia Men's Varsity Swim Team, NCAA Division I **2010 – 2012**

- 2012 Pool Record Holder 200 freestyle Relay
- Best Times: 50 freestyle: 20.89; 100 freestyle: 47.60
- Trained 20+ hours weekly, including 6:30 A.M. practice daily

ACTIVITIES AND PROJECTS

Columbia University Society of Automotive Engineers **2010 – 2013**

- As System Head for Controls, participated in the building of a Formula-style racecar for competition with other universities and professional teams worldwide; role involved design of a new space-efficient and lightweight pedal and control system.
- Designed and implemented new impact attenuator design, based on EPS insulation foam, to reduce weight and improve the car's efficiency; implementation involved static and quasi-static testing and energy-absorption analysis

Application Development Initiative **2013 – Present**

- As part of the Infrastructure Team, helped redesign and develop several web-applications for the Columbia student body including data API and interactive course scheduler

Woodwork and Fine Cabinetry **2003 – Present**

- Planned and constructed a 14-foot skiff from raw materials
- Various other projects including tables, games, machines, and bookcases

WDJC: The WHET DJ Language Compiler for Musical Composition **Fall 2013**

- Semester-long project for Columbia Programming Languages and Translators (COMSW4115) course: as Team Leader, with 3 teammates, created and formalized the DJ Programming Language for MIDI musical composition; designed and implemented the WDJC compiler for the DJ language, producing MIDI sound files from DJ source

Squareday: FourSquare Itinerary Application **Fall 2013**

- Semester-long project for Columbia User Interface Design (COMSW4170) course: with 3 teammates, created and implemented schedule generator based on the FourSquare API, allowing users to create itineraries with venues and times.

SKILLS

- Experienced in HTML, CSS, Javascript, TeX, JAVA, C, OCaml and UNIX programming languages
- Electrical Engineering, computer design and circuit analysis and creation of several projects, including reaction tester and computer-controlled thermal bitmap printer
- Mechanical Engineering, 3-D computer design and mechanical analysis using Creo design software, including innovative pedal-box system and impact attenuator for FSAE car as well as several machines, puzzles, and toys on Thingiverse and Shapeways