# Zachary Halle

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## EDUCATION

### CARNEGIE MELLON UNIVERSITY

**BS in Computer Science**
Expected May 2017 |
Pittsburgh, PA
School of Computer Science
Minor in Mathematics
GPA: 3.10 / 4.0

### CLARKSTOWN HS NORTH

Grad. June 2013 | New City, NY

## LINKS

Github: **zachhalle**
Personal: **zachhalle.github.io**
Blog: **zachhalle.github.io/blog**
Email: **zhalle@cmu.edu**

## COURSEWORK

- Algorithm Design and Analysis,
- Compiler Design,
- Computer Systems,
- Foundations of Programming Languages,
- Parallel Data Structures and Algorithms,
- Functional Programming,
- Great Theoretical Ideas in Computer Science,

## SKILLS

### LANGUAGES

Java • C • OCaml • Scala
Python • SML • C# • Rust
C++ • JScript .NET • x86
LLVM IR • LaTeX • Haskell
JavaScript • F# • Lisp

### APPLICATIONS

Git • Subversion • GDB
Sublime Text • Eclipse
TeXMaker • MySQL Workbench

## EXPERIENCE

### HCI RESEARCH | Carnegie Mellon University

May 2015 - Aug 2015 | Pittsburgh, PA
- Rewrote self-teaching SimStudent app from ground up for increased modularity and efficiency
- Wrote tool to convert behavior graphs with unordered cliques into totally ordered graphs so that they would be compatible with SimStudent learning application

### SENIOR TEACHING ASSISTANT | Carnegie Mellon University

15-150: Functional Programming
Aug 2014 – May 2015 | Pittsburgh PA
- Led lab section where students practice concepts learned in lecture
- Held office hours where students sought help with course material
- Contributed to writing homeworks, lab handouts, and exam questions

### SOFTWARE ENGINEERING INTERNSHIP | Perceptronics Solutions Inc.

Jun 2014 - Aug 2014 | Washington DC
- Rewrote backend data structures for new Influence Diagram editor application Adonis
- Implemented data serialization using JAXB library with custom serialization techniques
- Wrote persistence service feature to connect to MySQL database programmatically using JDBC driver, allowing us to read and write Java objects to and from a text database

## PROJECTS

### SAFER C  Summer 2015

Safer C guarantees that you never leak memory and never use it after freeing it, all at compile time, and without the overhead of garbage collection. Developed with my partner for our Compiler Design class, it is a C-like imperative programming language compiled to x86 machine code, with Rust-like memory management features.

### ELEFANT  Summer 2015

Ongoing project. Elefant never forgets! Tell Elefant to keep track of your sensitive files and directories and it will automatically maintain their $n$ most recent copies at configurable intervals.

### IVORY  Summer 2014

Ivory is a complete chess application with custom GUI and AI implemented using the Alpha-Beta pruning algorithm augmented with various improvements. The source code is in Scala.

### SUBMARINE ATTACK  Summer 2011

Created at CMU High School Game Academy. Worked as part of a team to make arcade style 3D submarine game in Unity 3D. Designed and implemented features of the heads-up display including radar in JScript .NET.