Gerald F. **Wu**

COMPUTER SCIENCE · APPLIED MATHEMATICS

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Skills

Programming: Java, C, Scala, C++, JQuery/JS, OCaml, Racket, Processing, Shell scripting, PHP, ASP Classic, HTML/CSS

Other: RHCSA Certified GNU/Linux Systems Administration, LaTeX, Git

Education

Brown University

Providence, RI

MAJOR: COMPUTER SCIENCE, APPLIED MATH — *2017 - PRESENT*

2017-2018 **CS**, 0170: An Integrated Introduction | 0180: An Integrated Introduction
2017-2018 **APMA**, 0350: Applied Ordinary Differential Equations | 0360: Applied Partial Differential Equations I
2017-2018 **MATH**, 0350: Honors Calculus (Multivariable) | 0540: Honors Linear Algebra | 1530: Abstract Algebra

Thomas Jefferson High School for Science and Technology

Alexandria, VA

HIGH SCHOOL EDUCATION — *2013 - 2017*

- GPA: 4.37 – AP Computer Science with Data Structures, Parallel Computing, Computer Systems Research

Experience

FMS Inc.

McLean, VA

SOFTWARE ENGINEERING INTERN — *May 2018 - Aug. 2018*

- Cluster analysis in large-scale graphs (C#)
  - Researched, implemented, and **optimized** the **Markov Clustering Algorithm** (MCL) to identify clusters in relational graphs of size **100,000+** nodes and **120,000+** edges in less than **10 minutes**
- Implemented secure, PCI-compliant payment integration on the web using Authorize.Net (ASP Classic)
  - Complete integration with the **Authorize.Net** payment gateway, including both **one-time** payments and long-term customer **payment profiles**

Smithsonian Institution

Washington D.C.

SOFTWARE ENGINEERING INTERN — *Jun. 2016 - Aug. 2016*

- Metadata extraction tool (Java/shell scripts)
  - Reads **metadata** from files in an ingest folder and populates an **Oracle database** with the data
- Metadata ingestion tool (Java)
  - Automatically processes **spreadsheets** within ingest folders and populates **Oracle database**

Smithsonian Institution

Washington D.C.

SOFTWARE ENGINEERING INTERN — *Jun. 2015 - Aug. 2015*

- Two-part data integrity program for Smithsonian Digital Asset Management System
  - Ingests **MD5 checksum** data and writes it to an Oracle database, and **verifies data integrity** at a later date

Projects

Quantum Mechanical Wave Function Propagation

Processing

GITHUB.COM/98WUG/QUANTUMEVOLUTION

A program to evolve arbitrary initial states through time for the one-dimensional Schrodinger Equation and Wave Equation in the absence of a potential field. Highly optimized to run in **real time**. Accurate to millions of timesteps before noticeable error propagation.

An Approximate Solution to the Packing Problem

C++

GITHUB.COM/98WUG/SENIORRESEARCH

An approximate, polynomial time solution to the classic NP-hard packing problem. Implemented using the sorting-first greedy approach to packing.