Gerald F. **Wu**

Computer Science · Applied Mathematics

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Skills

Programming: Java, C, Scala, C++, OCaml, Racket, Python, Processing, Shell scripting
Web: JQuery/JavaScript, ASP Classic, PHP, LAMP, HTML/CSS
Other: RHCSA Certified Linux Systems Administration, Docker, LaTeX, Git

Education

Brown University

Providence, RI

Major: Computer Science, Applied Math — *2017 - PRESENT*

CURRENT	**CS**, Introduction to Systems | Database Management Systems
CURRENT	**Applied Math**, Applied Partial Differential Equations II | Statistical Inference I
2017-2018	**CS**, An Integrated Introduction I | An Integrated Introduction II
2017-2018	**Applied Math**, Applied Ordinary Differential Equations | Applied Partial Differential Equations I
2017-2018	**Math**, Honors Calculus (Multivariable) | Honors Linear Algebra | 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

Applied Mathematics Teaching Assistant

Providence, RI

Brown University — *Sep. 2018 - PRESENT*

- Undergraduate teaching assistant for APMA 0340: Methods of Applied Mathematics II. This course covers both **nonlinear ordinary differential equations** and **partial differential equations** from an applied mathematics perspective.

Software Engineering Intern

McLean, VA

FMS Inc. — *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**

Software Engineering Intern

Washington D.C.

Smithsonian Institution — *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**

Software Engineering Intern

Washington D.C.

Smithsonian Institution — *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.