

# Jay Speidell

## Software Engineering Data Science



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## Education

B.S. Computer Science | 2020  
Old Dominion University | 3.94 GPA

## Skills

### Programming:

- C/C++
- Java
- Python

### Software Engineering:

- Cloud Computing (AWS, GCE)
- Continuous Integration
- Linux/Unix
- REST APIs (Flask)
- SSH
- Unit Testing
- Version Control (Git, Github)

### Data Science:

- SQL
- Data Exploration & Cleaning
  - Pandas
- Data Visualization
  - Folium, Pyplot, Seaborn
- Machine Learning
  - Numpy, Pytorch, Scikit Learn, Scipy, Tensorflow

*I love building software and working with data! I've had a fun career, but I never truly had a passion for what I was doing. This changed when I picked up programming as a hobby. After burning through a DSA textbook, learning Python and C, and diving into Kaggle, I went back to school and discovered that this is what I was meant to do!*

## Software Engineering

### ODUConnect - Software Engineering Project (Portfolio Link)

An interactive web app to connect industry professionals with mentoring opportunities at ODU.

- Built continuous deployment pipelines.
- Led the front-end design, including process flows, UX, UI, and database requirements.
- Developed and deployed a REST API in Flask.
- Broke front end components into discrete tasks that I prioritized and assigned to team members with instructions and tutorials to implement in ReactJS.

### CPU Temperature Approximation (GitHub Link)

A Python application with matrix solver module built from scratch that continuously approximates discrete time series data.

- Developed algorithms for matrix solver and cubic spline, linear least squares, and piece-wise interpolation.
- Created unit tests and documentation.

### PySwarms Open Source Contribution (Portfolio Link)

Open source contributions to a particle swarm optimization research library in Python that enable researchers to better understand their models.

- Created new objective functions for benchmarking and improved existing ones, along with full unit test coverage.
- Discovered opportunity to improve visualization with Pyplot gradients and submitted the feature as a separate pull request.

## Data Science

### Toxic Comment Classification (Portfolio Link)

Analysis and modeling of Wikipedia comments.

- Performed a statistical analysis of comment data to inform data processing, feature engineering, and ML strategies.
- Created and tested new features using benchmark models.
- Developed a Support Vector Machine model incorporating a custom Naive Bayes weight feature transformer that effectively identified toxic comments.

### Galaxy Zoo Challenge (Portfolio Link)

Describe galaxies with space telescope data.

- Created a data processing pipeline that extracts the region of interest from images and transforms data into Pytorch tensors.
- Developed a convolutional neural network that accurately describes images and achieves goal root mean-square error.

### 3D Printed Trail Maps (Portfolio Link)

## Work Experience

Nov'15-Present	Marketing Manager at Momentum, Inc	Seattle, WA
Mar'08-May'15	Special Projects Manager at The Speidell Group	Lynchburg, VA
Jul'11-Mar'14	English Immersion Teacher at Multiple Private Schools	Seoul, Korea