# Joshua Cook

Bash, C, Latex, Python, SQL
BLAS, LAPACK, numpy/scipy, pandas, sklearn, tensorflow, keras
Computational Mathematics, Machine Learning
AWS CPU/GPU, Docker, Mongo, Postgres, Spark

+13104331646 · joshuacook.me · me@joshuacook.me

## Experience

**2016 - Present**     **Instructor, Data Science Immersive** for General Assembly (Santa Monica, Ca)

- Design and implement 450 hour curriculum in the fundamentals of statistical learning.
- Manage student project development in fields such as Semantic Search, Feature Extraction Pipelines, Computer Vision, Convolutional Neural Networks, and Fourier Analysis.
- Guide students in the design and maintanence of scalable data infrastructure using AWS, Docker, and open-source technologies such as MongoDB, PostgreSQL, and Apache Spark.

**2016 - Present**     **Author**, *The Containerized Jupyter Platform* for APress (Santa Monica, Ca)

- Conceive, develop, and author forthcoming (Late Summer 2017) book on using Docker and Jupyter for scalable medium- and large-scale data applications.

**2016 - Present**     **Developer** for Udacity (Remote)

- Iterate on Deep Learning Project for Machine Learning Nanodegree using keras and tensorflow.
- Design and maintain Docker image for students of Self-Driving Car Nanodegree.

**2016 - 2017**     **Machine Learning Engineer** for Inrix (Santa Monica, Ca)

- Designed and implemented predictive models using pure numpy and sklearn.
- Elaborated upon existing in-house data processing and analysis tools.

**2015 - 2016**     **Sofware Quality Assurance Engineer** for Invoca (Santa Barbara, Ca)

**2014 - 2015**     **Research Fellow** in the Lab of Dr. Jussi Eloranta

Cal State Northridge, Department of Chemistry and Biochemistry (Northridge, Ca)

- Elaborated upon algorithms for diagonalizing large matrices (C, Python).
- Funding provided by NSF Grant, Partnership for Research and Education in Materials.

**2012 - 2014**     **Full Stack Web Developer** for Phylia de M. (Los Angeles, Ca)

**2010 - 2012**     **Lecturer** in the Graduate School of Education & Information Studies at UCLA (Los Angeles, Ca)

- Taught graduate students earning their Masters of Education
- Taught pre-service teachers earning Secondary Credential in Mathematics

**2005 - 2010**     **High School Mathematics Teacher** (Los Angeles, Ca)

# Presentations, Projects & Publications

AWS System
Architecture

### Image Analysis System

- uses AWS Elastic Compute Cloud, Simple Queue Service, and Relational Database Service (PostgreSQL).

C

`simple_sipp_load_tester` ,

- a wrapper to a C tool for load testing SIP platforms.

`invoke_call`

- a command line SIP client.

Computational
Mathematics

### Applications of Imaginary Time Propagation Method in Material Research

- Presented a novel approach to the iterative solution of Hamiltonian matrices in the context of a density functional analysis of phase-change behavior in extremely low-temperature Helium.

### Computational Methods in Molecular Quantum Mechanics

- Senior thesis documenting work done in numerical python and C as part of the laboratory of Dr. Jussi Eloranta.

Docker & Jupyter

### CarND Term1 Starter Kit

- Designed and built Docker implementation in support for students in Self-Driving Car Nanodegree Program

### High-Performance Data Science with Docker, Jupyter, and Digital Ocean video

- Talk delivered at ODSC-West 2016.

### Responsive Artificial Intelligence, *In Progress*

- leverages five different Docker images and the `docker-compose` tool to build an interactive system with delayed job processing.

Machine Learning

### Responsive Artificial Intelligence, *In Progress*

- uses Syntaxnet as NLP parser and a Q-Learning Algorithm to train the AI to respond to elementary set theory questions.

### Train Smartcab to Drive

- uses reinforcement learning to train a smartcab to follow the rules of the road.

### Simple Wikipedia Search Engine

- uses latent semantic analysis to perform search over a Wikipedia category.

# Education

**Bachelor of Science in Mathematics** at Cal State Northridge (Northridge, Ca).

**Associate of Science in Physics** at Santa Barbara City College (Santa Barbara, Ca)

**Master of Education** at UCLA (Los Angeles, Ca)

**Bachelor of Arts in English** at UC Berkeley (Berkeley, Ca).