# Andrew Fiorillo

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## EDUCATION

**NEW COLLEGE OF FLORIDA**
BA in Physics, with Honors
May 2015 | Sarasota, FL

**UNIV. OF SOUTH FLORIDA**
MA in Applied Mathematics
Present | Tampa, FL

## LINKS

LinkedIn:// **Andrew-Fiorillo**
Github:// **andrewmfiorillo**
Website:// **andrewmfiorillo.github.io**

## ACADEMIC EXPERTISE

### PHYSICS

Statistical Thermodynamics
Classical/Quantum Mechanics
Statistical Mechanics
Electrodynamics
Solid State Physics
General Relativity
Acoustics
Nanomaterials Research

### MATHEMATICS

Linear Algebra
Differential Equations
Probability & Statistics
Analytical Geometry
Vector Calculus

## RELEVANT SKILLS

### LANGUAGES

Python (Flask, Tornado, Django, ...)
MATLAB • JavaScript (Node, Express...)
Java • C++ • C# • Go • Ruby • R
*Native:* English
*Basic:* German • French

### SOLUTIONS

Stateless Systems • Distributed Systems
OOP • Asynchronous Programming
Hypothesis- & Test-Driven Development

### SOFTWARE

Cloud Compute: AWS EC2 • Google
Cluster Compute: Custom[1] • Kubernetes
NoSQL: MongoDB • Neo4j • BigChainDB
SQL: SQLite • MySQL
Nginx • Docker • Jenkins • Git • Linux

## PROFESSIONAL EXPERIENCE

### SOFTWARE ENGINEER | Inspirata

May 2015 - Present | Tampa, FL

- Architected and developed an FDA-regulated file & metadata system for storing, allocating, and processing ~100 TB of research data.
- Designed, developed, documented, and supported inter-language wrappers, CLI and GUI tools to support development of image analysis algorithms.
- Maintained and extended an in-house HPC cluster (~50 local nodes). Developed tools to automate cluster management and monitoring.
- Implemented updates for automatic deployment on AWS EC2 and Google Compute Engine platforms. Performed cost analysis against local cluster configuration and developed a strategy to reduce computing costs by ~10%.
- Orchestrated and implemented a workflow for collecting high-volume research data, tracking it for regulatory purposes, distributing it for development and validation activites, and providing feedback loops to track annotations.
- Developed image analysis algorithms based on mathematical and biological models. Applied machine learning techniques to analyze biomedical images.
- Authored ~1000 pages of documentation to cover regulatory-, developer-, and end-user-requirements. Instituted a centralized documentation solution.

### LEAD TECHNOLOGY SUPPORT SPECIALIST | New College of FL

Sep 2012 – May 2015 | Sarasota, FL

- Provided desktop application, hardware, and network/telecom support to faculty, staff, and students on the New College campus.
- Generated campus-wide wireless-connectivity heat map and authored a report to prioritize infrastructure renovations.
- Served on Technology Advisory Committee to compose 5- and 10-year Equipment Renewal & Replacement Plans for New College.
- Authored (~50) tutorials for the Office of IT to assist with imaging procedures, troubleshooting, application support, and common end-user issues.

### ASSISTANT DIRECTOR | iD Tech Camps

Summers 2011-2014 | Stanford, CA; Princeton, NJ; Tampa, FL; Atlanta, GA

- Directed curriculum development and activities for a sleep-away technology camp (7-17 year olds) with courses in programming and game design.
- Managed staff of 21 instructors and provided technical and academic support for the camp (~140 campers/desktops).
- Provided extracurricular instruction to provoke and cultivate camper interest in STEM topics, focusing on astrophysics and quantum mechanics.

## RESEARCH EXPERIENCE

### RESEARCH ASST. | Optical Spectroscopy & Nanomaterials Lab

Jan 2013 – Sep 2015 | Sarasota, FL

- Developed a data collection and analysis framework to automate spectrometer operation, peak fitting, and plot generation. Collected ~80k Raman spectra!
- Modeled edge-enhanced Raman spectra in differing geometric and crystallographic configurations for semiconductor-grade Silicon wafers.

1 At Inspirata we developed and continue to maintain a proprietary HPC cluster solution.