

Andrew Fiorillo

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EDUCATION

UNIV. OF SOUTH FLORIDA

MA IN APPLIED MATHEMATICS

Jan 2017 to Nov 2017 | Tampa, FL

Moved to Germany before completion

NEW COLLEGE OF FLORIDA

BA IN PHYSICS, WITH HONORS

May 2015 | Sarasota, FL

LINKS

LinkedIn:// [Andrew-Fiorillo](#)

Gitlab:// [@afiorillo](#)

Github:// [@afiorillo](#)

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RELEVANT SKILLS

LANGUAGES

Mastery: Python • MATLAB/Octave

Intermediate: Go • JavaScript • Java

Spoken: English • German (B1)

CLOUD COMPUTING

Google Cloud • AWS

Paas (AppEngine) • IaaS (EC2)

GCS • BigQuery • Dataflow

DATA SCIENCE

TensorFlow • OpenCV • Caffe

scikit-learn • Pandas • Numpy/Scipy

GLMs • Ensemble Models • CNNs

BACKEND DEVELOPMENT

Flask (Py) • net/http (Go) • PostgreSQL

SQLAlchemy • Alembic • Redis

Protobuf • Celery • Docker • MongoDB

Interested in: etcd • Kubernetes

FRONTEND DEVELOPMENT

jQuery • React.js • Meteor.js • D3.js

Mocha.js • SASS/CSS • Material • HTML

ACADEMIC EXPERTISE

MATHEMATICS

Probability & Statistics • Linear Algebra

Ordinary & Partial Differential Equations

Analytical Geometry • Vector Calculus

Numerical & Functional Analysis

PHYSICS

Classical & Quantum Mechanics

Statistical Mechanics • Electrodynamics

Solid State Physics • Acoustics

Special & General Relativity

PROFESSIONAL EXPERIENCE

TEAM TECH LEAD | DELIVERY HERO SE

Jan 2018 - Present | Berlin, DE

I started working at Delivery Hero as a mid-level backend engineer. After a few months, I lobbied to apply machine learning to a few well constrained problems in our services. My bread & butter is designing and building global backend services in Python (Flask) and Go (net/http). Now, as a tech lead, I also focus on the product vision, team development, and sustainable architecture.

• *Development & Design:*

- I provided maintenance and develop new features for 6 global services, servicing 30+ countries. The images & GIS service handle ~5 billion requests per day.
- Designed a global feedback service (shared among DH brands) based on a stream-processing platform (not dissimilar to Apache Kafka).
- Reduced cost of the global images service by ~20% while also reducing median time to first byte by ~30%.
- Developed a customer self-service portal to deflect ~60% of issues for the contact center.

• *Machine Learning:*

- Designed an NLP-pipeline for language detection and sentiment analysis of user-submitted reviews.
- Developed an ensemble model for detecting reviews submitted by restaurant owners ("fraudulent" reviews).

• *Management:*

- Co-founded a "buddy program" to pair new hires with senior employees, easing the transition of moving to Berlin.
- Interviewed 60+ candidates both as a technical lead (evaluating mastery in Python/Go) and a "bar-raiser" (evaluating general potential).

SOFTWARE ENGINEER | INSPIRATA

May 2015 - Jan 2018 | Tampa, FL

Inspirata is where I cut my teeth as a software engineer. I started fresh out of school with a firm knowledge of physics and scripting, but a lack of experience with building production systems. Over the course of nearly three years I worked with a group of researchers and built the services/tools they needed. I was lucky to be a part of this small startup and to learn their scientific approach to ML problems.

• *Data Engineering:*

- Designed an FDA-regulated content management system for ~500 TB of clinical research data. Medical-specific requirements (such as double-entry for validation datasets) were handled.
- Developed a proprietary ground truth collection app (Meteor.js & Leaflet) for labelling regions of interest. Built a plugin system to conduct task-specific clinical studies and distribute datasets among multiple users.

• *Machine Learning:*

- Developed an ensemble model to detect and prioritize regions of interest at low resolution, early in the image processing pipeline.
- Created a novel algorithm for edge detection, building off of the work done by Mikolajczyk et al. (2005), ultimately based in Taylor expansions.
- Designed linear CV models for analyzing mitotic index in cells, feeding into a histological grading algorithm.

• *Development & Design:*

- Optimized MATLAB and C++ (Mex) functions for low-level statistical and mathematical operations (~10x speedup). Increased test coverage to 95% for all low-level mathematical functions in the core library.
- Built an image tile server to support the ground truth tool and parallel processing (using multiple proprietary image SDKs).