Cody Swain

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WORK EXPERIENCE

Lawrence Berkeley National Laboratory **July 2019 – Aug. 2019**
Research Assistant — Data Science *Berkeley, Ca*

- Assistant to Dr. Daniel Dwyer, on the Deep Underground Neutrino Experiment (DUNE)
- Co-developed a baseline algorithm with >98% accuracy, which clustered 3D voxels of simulated neutrino events using a first pass density-based noise reduction algorithm (DBSCAN) followed by PCA and basic thresholding

iBeat **May 2018 – Sep. 2018**
Software Engineering Intern *San Francisco, Ca*

- Built and maintained a PostgreSQL database for clinical patient data from a joint UCSF study
- Constructed a complex data pipeline for database ingestion which utilized AWS EC2 instances, S3, and Batch
- Developed Python algorithms which compute metric data from raw sensor data, over varying time intervals
- Designed and carried out a protocol to systematically collect data for a fall detection algorithm
- Executed Monte Carlo Simulations of photon absorption in multi-layered tissue

iBeat **May 2017 – Aug. 2017**
Software Engineering Intern *San Francisco, Ca*

- Developed Python tools to aggregate, manage, and analyze sensor data collected from prototype sensors
- Created reliable and robust methods for managing clinical data utilizing multiple RESTful API's and AWS
- Constructed a GUI used internally and at UCSF for precisely timing data collection protocols
- Developed a method to manufacture optical tissue phantoms used as a control for sensor development

VAT Inc. **July 2016**
Mechanical Engineering Intern *San Jose, Ca*

- Created, and improved CAD models of semiconductor manufacturing equipment for customer reference

Tango Systems Inc. **June 2015 – Aug 2015**
Mechanical Engineering Intern *San Jose, Ca*

- Assembled semiconductor manufacturing equipment in a clean room, created CAD models in SolidWorks 2015

EDUCATION

University of California, Los Angeles Expected graduation **December, 2020**
BS, Computer Science and Engineering

- Upsilon Pi Epsilon (CS Honors Society), Etta Kappa (EE Honors Society), Director of 1000 Pitches UCLA, Board Member of Bruin Entrepreneurs, Undergraduate co-chair of Center for Emerging Technology

SKILLS & COURSEWORK

- **Skills:** AWS (S3, EC2, RDS, ECS, Batch); Python (Pandas, NumPy, Psycopg2); React Native; C++; SQL;
- **Relevant Completed Studies:** Programming Languages, Algorithms and Complexity, Discrete Math, Differential Equations, Linear Algebra, Hands-On Machine Learning with Scikit-Learn and TensorFlow

PROJECTS (Located at http://www.codyswain.net)

Slide and Cherishly (React Native Apps) ❖ **Self-designed 3D Printer** ❖ **Model Ion Thruster**

REFERENCE ❖ **Steven Szabados;** Lead Data Scientist at iBeat; stevenszabados@gmail.com