PEYTON ROSE

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TOOLKIT

Experienced	Python, C++, SubVersion, numpy, matplotlib, scikit-learn, openCV, grid computing
Familiar	Git, SQL, AWS (EC2, S3), HTML, CSS, flask, tensorflow, pandas

EXPERIENCE

Insight Health Data Science Jan. 2017 - Present
Data Science Fellow *San Francisco, CA*

- Used Flask to build *www.isthismetastasis.info*, which classifies tissue slide frame images as normal or metastatic.
- Trained a logistic regression classifier using scikit-learn to automatically identify metastatic tissue in histological slides.
- Implemented computer vision algorithms with openCV to identify key features in slide frame images.
- Re-purposed the convolutional neural network, Inception-v3, using transfer learning methods with TensorFlow, to construct features capable of distinguishing between normal and metastatic tissue.

University of California Santa Cruz May 2012 - Dec. 2016
Graduate Student Researcher *Santa Cruz, CA*

- Used cluster and grid computing methods for analyzing multi-terabyte datasets from the Large Hadron Collider (LHC) to study fundamental particle interactions at the energy frontier.
- Designed an analysis using statistical and multivariate techniques to measure properties of the Higgs boson and set limits on the rate of Higgs boson decays to bottom quarks.
- Contributed to and maintained an analysis framework shared by over 40 developers across 15 analyses, which performed calibrations, selections, and bookkeeping for both real and Monte Carlo data.
- Provided support and upgrades for the ATLAS SemiConductor Tracker, which is an essential subdetector for measuring the trajectories of particles at the LHC.

The College of William and Mary Aug. 2007 - May 2011
Undergraduate Student and Researcher *Williamsburg, VA*

- Analyzed data from a nuclear physics experiment (Q_{weak}) to find the optimal operating parameters for a set of detectors.
- Built a digital voice recorder (with playback) from scratch for a project-based course, using off-the-shelf integrated circuits and a Field Programmable Gate Array (FPGA).

EDUCATION

University of California Santa Cruz Dec. 2016
Ph.D. in Particle Physics

The College of William and Mary May 2011
B.S. in Physics (Honors) and Mathematics, *Summa Cum Laude*

HONORS AND AWARDS

NSF Graduate Research Fellowship Program Honorable Mention Mar. 2013
Phi Beta Kappa Dec. 2010