Ivan Aguilar

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Profile

Recent graduate interested in employing analytic skills developed via coursework and research in mathematics, physics, and computer science. As a research intern at JPL, I enjoyed interpreting data and providing guidance in open investigations. Personal projects using Swift, Cocoa Touch, and Flask.

Research and Work Experience

2015 **Undergraduate Researcher**, *Redwood Center Theoretical Neuroscience*, Berkeley, CA.
- Analyzed the performance of a multilayer perceptron as a result of dimensionality reduction.
- Used MNIST data set to benchmark performance.

Mentor: Dr. Friedrich T. Sommer

2013 - 2014 **SIRI Program**, *Jet Propulsion Laboratory*, Pasadena, CA.
- Developed a calibration scheme for a data set of ground based observations of Saturn.
- Analyzed time dependent thermal radiance and generated visualizations of seasonal variations.
- Results presented by mentor at international conference on Planetary Atmospheres.

Mentor: Dr. Glenn S. Orton

2011 - 2013 **Family Room Specialist**, *Apple Inc.*, Pasadena, CA.
- Provided technical support to hundreds of people on a weekly basis.
- Facilitated training sessions to members of an exclusive program.
- Communicated effectively with customers which was key to providing appropriate solutions.

2013 **Student Research Assistant**, *Carnegie Observatories*, Pasadena, CA.
- Performed Point Spread Function photometry in order to locate Cepheid variable stars.
- Generated a period-luminosity relationship for observed Cepheids.
- Data analysis was accomplished using Python and open source libraries (e.g. SciPy, NumPy, matplotlib).
- Results presented at undergraduate research conference.

Mentor: Dr. Victoria Scowcroft

Education

2016 **B.A., Applied Mathematics**, *University of California*, Berkeley, CA.,
Applied Mathematics cluster in Computer Science

2016 **B.A., Physics**, *University of California*, Berkeley, CA.

Notable Courses

Math — Linear Algebra, Numerical Analysis, Discrete Math

Physics — Quantum Mechanics, Experimentation Lab, Statistical Mechanics

Comp. Sci. — Algorithms and Intractable Problems, Machine Learning, Operating Systems, Neural Computation

Computer Skills

Languages — Three years of research experience in a UNIX environment using PYTHON and SCIPY stack. Courses using C/C++, JAVA, MATLAB, and MATHEMATICA. Personal projects using SWIFT and FLASK.

Concepts — Research involving statistical analysis techniques, theoretical neuroscience concepts, and information theory. Coursework exploring algorithm runtime analysis, asymptotic analysis, neural networks, and operating system fundamentals.