2211 Carleton St. Apt. 37
Berkeley, CA 94704
(818) 748 7511
aguilar@berkeley.edu
eivenvector.me

Ivan Aguilar

Research and Work Experience

2015 – Present **Undergraduate Researcher**, *Redwood Center for Theoretical Neuroscience*, Berkeley, CA.
- Investigate results about the sparse perceptron model of a neuron and corresponding synaptic capacity.
- Analyzed the performance of a multilayer perceptron as a result of dimensionality reduction in the hidden layers and input space.

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.
- Generated IDL code to apply corrections from observational anomalies.
- 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.
- Presented workshops to consumers showcasing product features and benefits.
- Communicated effectively with customers which was key to describing adequate solutions.

2013 **Student Research Assistant**, *Carnegie Observatories*, Pasadena, CA.
- Performed Point Spread Function photometry on NGC 300 in order to locate Cepheid variable stars.
- A period-luminosity relationship was generated for the Cepheids.
- Data analysis was accomplished using Python and open source libraries (e.g. SciPy, NumPy, matplotlib).
- A determination of a distance to NGC 300 was used in order to calibrate Hubble's constant.
- Results presented at undergraduate research conference.

Mentor: Dr. Victoria Scowcroft

Education

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

Notable Courses

Math Linear Algebra, Numerical Analysis, Discrete Math

Physics Instrumentation Lab, Experimentation Lab, Statistical Mechanics, Classical Mechanics

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

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.

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.