

Aravind Natarajan

Palo Alto, CA
aravindnatarajan.com

anat01@me.com
github.com/aravindnatarajan

(412) 352 9178
linkedin.com/in/anat01

Experience

FELLOW AT INSIGHT DATA SCIENCE, PALO ALTO

JUNE 2014 - PRESENT

- Developed SIGNS, a tool to teach English to deaf children using American Sign Language.
- Obtained sign video data from HandSpeak.com and stored the data in a MySQL database. Corpus of words pertaining to children's literature was obtained from the [Gutenberg project](http://Gutenberg.org).
- Performed language modeling, part-of-speech tagging, phonetic analysis, and word clustering analysis using Python's Natural Language Processing and Machine Learning toolkits.
- Front end developed using Flask and Javascript, and hosted at funwithasl.net using AWS.

RESEARCH ASSOCIATE, PITTSBURGH PARTICLE PHYSICS, ASTROPHYSICS, AND COSMOLOGY CENTER MCWILLIAMS FELLOW AT THE CENTER FOR COSMOLOGY, CARNEGIE MELLON UNIVERSITY

SEP 2013 - MAY 2014

SEP 2009 - AUG 2013

- Analyzed data from the Sloan Digital Sky Survey using MySQL and Python's scikit-learn package, and built a classifier to identify quasars using Support Vector Machines.
- Worked with over 100 hours of radio data obtained from the Green Bank Telescope using C and Python, to perform cross correlations of radio maps with optical galaxy catalogs, to quantify the abundance of neutral Hydrogen.
- Contributed as a full member of the SCI-HI collaboration to collect and analyze radio data obtained from Isla Guadalupe, to study the masses and luminosities of the first generation of stars.
- Served as co-Producer and scientific advisor of a planetarium show titled "The Hydrogen Sky". Presented a public talk titled "The Dark Matter Puzzle" at the Pittsburgh Allegheny Observatory.

POSTDOCTORAL FELLOW IN PARTICLE ASTROPHYSICS, BIELEFELD UNIVERSITY, GERMANY

OCT 2007 - JULY 2009

- Worked on the cosmological implications of particle dark matter through a Markov Chain Montecarlo analysis of cosmic microwave background data, using codes written in Python and C.
 - Studied the infall of dark matter on to the Milky Way Galaxy using computer simulation code written in C, to identify regions of high dark matter density in the solar neighborhood.
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Education

- Ph.D (Physics), University of Florida at Gainesville Aug 2002 - Aug 2007
 - Bachelor of Engineering (Electronics and Communication), Bangalore University, India Sep 2000
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Skills

- Machine Learning and Natural Language Processing using scikit-learn and NLTK. Bayesian estimation of model parameters using Markov Chain Montecarlo simulations.
 - Python, C, MySQL, Javascript.
 - Published [26 papers](#) in major journals, with over 300 citations.
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