

Tutoring (9/2006 – 9/2011)

- During 5 years of tutoring I tutored 100+ people in various areas such as Mathematics, (up through calculus, discrete math, and logic), Physics, (calculus based mechanics and electro-magnetism), Computer Science, (Java, VB.NET, LabVIEW and C/C++), and Web-Design, (HTML, CSS, JavaScript, and Javascript).

Web-Design (9/2006 – 9/2011)

- I have implemented shopping carts, (OScommerce, Ecommerce, Zen Cart), as well as integrating custom made modules. I have also installed/modified WordPress Templates, as well as the installation of myriads of Javascripts for photo-galleries, DHTML bars etc. I have deconstructed many Flash Templates, (Template Monster etc. templates), as well as some basic PHP/MYSQL (general database scripts). I have some experience with ASP.NET such as creating and embedding VB.NET programs and manipulation of other windows forms, (I am a fan of Microsofts Visual Web Developer).

Ontological Engine (mid 2011)

- Reasoning algorithms that can make deductions and associations between relationships is creeping up everywhere, especially in areas with extremely large data sets such as those used in data mining and experiments with multiple parameters. I worked on a small project in aid to a postdoc in UCLA's Neurobiology lab. This project entailed finding an algorithm which compared data sets concerning particular regions of the Brain in Mice. The goal was to compare multi-graphs of OWL related RDF formatted data through SPARQL queries. TopBRAID composer as well as Protégé was used extensively.

ODB to JDBC to RDF (mid 2011)

- Another project for the same person as the Ontological Engine. This project comprised of using D2R Server as an interlink to generate RDF files using JDBC with MySQL, which itself had to be translated from a Open Office Database. WAMP and D2R Server were used in this project.

Grant writing and Signal analysis with Labview were done, HMT (12/2008 – 5/2010)

- The work done at High Medical Technologies was done in the area of the sensitivity of Photo-electric detectors for imaging as well as grant writing and submission to the NIH (National Institute of Health). I set up a system for data acquisition using Labview and wrote programs for Digital Signal Analysis on the acquired signal.

Adaptive Algorithm for Lossless compression of Hyperspectral Images, JPL (6/2008 – 6/2009)

- The transfer speed of images is dependant how much memory that is needed to completely reconstruct the image (lossless image). I both documented as well as designed multiple functions a previously designed adaptive algorithm from Caltech which was not well understood. The algorithm was written in C and there were problems with implementing it on the hardware and so I designed a library of functions to make various sorts of “synthetic” images so as to test them on the hardware.

Optimizing Resonant Frequencies of a MEMS Gyroscope using Adaptive Algorithms, JPL (3/2008 – 6/2008)

- A project at NASA’s Jet Propulsion Laboratory, (JPL), this project dealt with designing a Matlab/Simulink program in order to control and to eventually optimize, through adaptive techniques, the voltages used in planar positioning of a MEMS Gyroscope. Due to irregularities in the manufacturing of MEMS gyroscopes the resonant frequencies of the drive and pitch axis are offset. Thus in order to match their resonant frequencies or to reduce the peaks offset one needs to adjust voltages that guides the planar positioning of the gyro. However, since no gyros are manufactured the same at the atomic level and each gyro is different due to the process a dynamic algorithm is needed to optimize the matching of frequencies. This project was done for my undergraduate thesis. After designing of the Matlab/Simulink program I designed a Genetic Algorithm in Java that manipulated binary strings. The hope was that eventually this algorithm would be applied to the voltage regulators.

Teachers Assistant and computer lab tutor, Los Angeles City College (2/2007 – 6/2008)

- Assisted teachers in helping students learn the basics through more advanced programming languages as well as general Microsoft office products. I TA’d 4 different classes as well as filled in for others.

Molecular Beam Epitaxy, Technische Universität Berlin (6/2006 – 8/2006)

- Manipulating the deposition of atoms to create lattices of particular structures is underlying to building (growing) all sorts of things from crystals which are used as clock timers, to the most efficient solar cells. Due to the resonant frequencies being many times stronger in fractal like patterns, to grow a structure efficiently one has to, within statistically probable parameters at the quantum level, try and force the growing to be of a particular pattern. My work consisted of designing a program in C++ library for several of the basic functions of MBE statistics.

Pain Avoidance and Psychological Physics, Caltech (6/2004 – 8/2004)

- Using LabVIEW I designed several variations of card games to test people's decision making. The ideas were of tracking irrational behavior due to pain avoidance. Decisions were tracked and analysis was performed on choices they made through the computer.

Spectroscopic analysis and driver design for a CCD Camera, JPL (6/2003 – 6/2004 and 8/2004 – 4/2006)

- In this project I used LabVIEW to design a device driver for a KLI-2113 CCD camera as well as several functions for data analysis using IRAF and VBA. I then observed comet 9P-Tempel 1 pre Deep Impact Mission at Table Mountain Observatory.

Forklift driver and general food distribution, Los Angeles International Church "Dream Center" (2/2002 – 10/2003)

- There are many in the Los Angeles area that are at the poverty level and many companies donated food to the L.A. area which was distributed to many other ministries through the Dream Center. I went on pick-ups for several local companies, assisted in sorting through food, Forklift driving, distribution to other local ministries and food give aways for Angelinos.