ALEX N. HORNSTEIN
Massachusetts Institute of Technology
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Notable Engineering Courses Taken At MIT:

18.03--Differential Equations
6.131--Power Electronics
6.111--FPGA-based digital design
6.100--Independent Project--Building an Electro-mechanical Laser Projector from scratch
6.004--Building a (simulated) 32 Bit Processor From the Transistor Level Up
6.012--Semiconductor Physics

College Work Experience:

1/1/04 to 1/1/05----UROP-Worked in the Marine Hydrodynamics Laboratory under Professor Alex Techet implementing motor control Systems for flapping-foil aquatic robots.
1/1/05 to 8/31/05-- UROP-Working in the MIT AI lab for professor Daniela Rus working on programming and circuit design for intelligent self-reconfiguring robots.

Other Work:

1/15/05--Started my first company, Terrapin Electronics. I do electronic design work and product development. Yearly income is ~$10,000

Other Position:

1/1/05 to present--Chancellor (President) of Tau Epsilon Phi fraternity, Xi Chapter
7/1/04 to present--Treasurer of MIT Electronics Research Society, a student-run machine shop

Skills:

(summary):

Really good at building stuff. I mean, like, really good.

(specifics):

Proficient in the use of machine shop tools. Over 2 years of experience.
Labview Experience with Analog Capture, Internet Interfaces, and Motion Control
Proficient in Matlab
Programming experience in C, C++, Java, Basic, various microprocessor languages, LISP, OpenGL applications, and HTML.
Experience with 68HC11 microcontrollers, PICs, Brainstems, and Basic Atoms, motorolla MSP*, motes, and tinyOS.**
Significant experience with homebuilt and off-the-shelf motor controllers including many homemade stepper motor controll applications and also Galil motor controllers.

Academic Awards

2003 SIEMENS-WESTINGHOUSE SEMIFINALIST

Research paper entitled, "The Costs and Benefits of 'Learning' and 'Culture' on Genetic Algorithms' Efficiency at Solving Multivariate Optimization Problems"

1st PLACE, NATIONAL FINALIST -- 2001-2002 NASA STUDENT EXPERIMENT COMPETITION

Co-wrote successful proposal on "An Investigation into Radiation Absorption Of Various Compounds and Their Application to Long Duration Space Missions," with 3 other NCSSM students, selected as one of 10 team experiments nationally in the NASA Student Involvement Program, Suborbital Student Experiment Module Competition (out of over 1,000 entries). Built experiment to NASA specifications in April 2002. In June 2002, spent 1 week on base at the NASAWallops Island facility, successfully launched experiment aboard a suborbital Orion rocket, and presented results ofexperiment to NASA engineers.

2nd PLACE, N.C JUNIOR SCIENCE & HUMANITIES SYMPOSIUM COMPETITION

Placed second out of nine semifinalists in the statewide JSHS competition in March 2002 with a computer-science project entitled, "Developing a Genetic Algorithm to Solve Optimization Problems." In April 2002, flown by the Department of Defense on an all-expenses-paid trip to present my research at the National Symposium in San Diego.