

JONATHAN KOBAYASHI

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SUMMARY

Motivated professional with experience in computer, web, and electrical power technologies. Enjoys working hard and seizes opportunities to overcome unfamiliar challenges. Excellent organizational and time management skills. Team player with experience working with different levels of staff to ensure successful completion of projects.

EXPERIENCE

Undergraduate Researcher, IIT; Chicago, IL – June 2010-August 2010

Participant of the National Science Foundation funded Summer Engineering Research Experience for Undergraduates (REU) in Hybrid Electric and Plug-in Hybrid Electric Vehicles. Designed, built, and tested an experimental bi-directional converter with vehicle-to-grid (V2G) capabilities for PHEVs. Designed, built, and tested an experimental battery/ultra-capacitor converter for HEVs and PHEVs. Helped design, build, test a universal non-inverting DC/DC converter for HEV and PHEV conversion.

- Implemented code using Simulink and Matlab Target Support Package
- Ran simulations of topologies using Simulink
- Reviewed a conference paper for the Applied Power Electronics Conference

Undergraduate Researcher, IIT; Chicago, IL – August 2009-May 2010

Worked on an experimental bi-directional AC/DC converter for plug-in hybrid electric vehicles. Interfaced DSP with various hardware including voltage sensors, current sensors, and IGBTs.

- Helped design IGBT gate drives
- Helped design amplifier circuits for sensors
- Ran simulations of topology with Simulink

Teacher's Assistant, IIT; Chicago, IL – August 2009-December 2009

Helped teach a robotics lab course. The course introduced incoming IIT students to hands-on lab work and problem solving.

Control Systems Member, IIT Formula Hybrid Team; Chicago, IL – August 2008-May 2009

Worked on the control system for IIT's Formula Hybrid team. Interfaced 8-bit Atmel AVR micro-controllers with various hardware including LCD screens, inductive proximity sensors, solid state relays, optocouplers, digital logic gates, digital to analog converters, potentiometers, and op-amps.

- Helped design overall control strategy
- Designed PCBs for the main control system
- Designed motor control circuit to control 4 motors independently

Intern, Hawaiian Electric Company; Honolulu, HI – June 2008-August 2008

Worked for the Engineering department, Substation, Protection and Telecommunication division. Redesigned the division's intranet website. Helped reorganize the division's shared network drive. Revised and edited substation drawings. Requested parts bids from multiple manufacturers.

- Researched communication relay standards from other US Reliability Councils.
- Helped investigate radio frequency interference caused by power cables

- Helped replace batteries at a transmission substation.
- Helped plan routes for a new optical fiber installation.

Web & Graphics Designer, Pyxel; Honolulu, HI – May 2007-July 2007

Designed and developed a website for the State of Hawaii FIRST Robotics Regional. Worked with the Regional director for content updates.

- Designed the interface and graphics
- Coded entire website from scratch

Teacher, Punahou School; Honolulu, HI – June 2007-July 2007

Taught a VEX robotics summer school course for 7th and 8th graders. Supervised and helped students learn about the design process from initial brainstorming to a final documented product. Created lesson plans and coordinated teaching schedules with other teachers. Provided technical support in design and programming for other teachers and students.

Teacher's Aid, Punahou School; Honolulu, HI – June 2006-July 2006

Helped teach a VEX robotics summer school course for 7th and 8th graders. Provided technical design and programming assistance to students and other teachers.

Intern, University of Hawaii at Manoa; Honolulu, HI – June 2005-July 2005

Summer intern for the College of Engineering Underwater Robotics Laboratory. Helped graduate students with Mini ROV project. Helped design a graphical user interface for ROV control. Designed the project website. Was the project's student spokesperson.

EDUCATION

Illinois Institute of Technology, Chicago, IL - B.S. Electrical Engineering, Expected May 2011

Cumulative GPA: 3.773/4.0

Major GPA: 3.810/4.0

Relevant Courses: Circuit Analysis I & II

Digital Systems

Analog & Digital Lab I & II

Engineering Electronics

Electronic Circuits

Signals and Systems

Fundamentals of Power Engineering

Object Oriented Programming (Java)

Data Structure and Algorithms (Java)

Digital Computers and Computing (Assembly code)

Calculus I, II, & III

Vector Calculus

Matrix Algebra and Complex Variables

McKinley High School, Honolulu, HI - GPA: 3.5/4.0, Graduated 2007

Relevant Courses: Introduction to Engineering Design (Academy Engineering course)

AWARDS

First Hawaiian Bank 2007, 2008 Scholarship Recipient

Illinois Institute of Technology University Scholarship Recipient

Heald Scholarship Recipient

FIRST Robotics 2007 Scholarship Recipient
Illinois Institute of Technology Dean's List Fall 2007, Fall 2008, Fall 2009, Spring 2010.

FIRST Robotics 2007 - Best Website Silicon Valley Regional
FIRST Robotics 2007 - Best Website Championship

SKILLS

Skilled with Mac OS X, Windows XP, Windows Vista, Microsoft Office (Word, Excel, Powerpoint, Outlook), Adobe Photoshop, Adobe Illustrator, Adobe Dreamweaver (HTML, CSS, Javascript, ASP), Apple iWork (Pages, Numbers, Keynote), Apple iLife (iMovie, Garageband, iPhoto, iWeb).

Experience with Atmel 8-bit AVR micro-controllers (PWM, ADC, TWI, SPI), HD44780 LCD screens, inductive proximity sensors, solid state relays, optocouplers, digital logic gates, digital to analog converters, potentiometers, and op-amps. Able to soldering, prototype, and test circuits.

Some experience with Altium Designer, Matlab/Simulink, Autodesk Inventor, Adobe Premiere, Adobe After Effects, Adobe Flash, Java, C, Objective-C, PHP.