Hieu Minh Nguyen

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A creative, driven engineer with experience in embedded systems, hardware prototyping, and robotics.

EDUCATION

Georgia Institute of Technology, Atlanta, GA
M.S Computer Science, *Computational Perception & Robotics*   Expected 2017
University of Southern California, Los Angeles, CA
M.S. Electrical Engineering, GPA: 3.83, *Computer Systems Architecture*   2012
B.S. Electrical Engineering, GPA: 3.79, *Computer Architecture, Controls & Robotics*   2011

TECHNICAL SKILLS

Engineering: Altium, Eagle, CodeComposer, Xilinx ISE/XPS, ModelSim, ChipScope, SPICE, Nimbic
Languages: C, C++, ARM assembly, Python, Perl, Bash, Java, Verilog, VHDL, Matlab, MicroC
Software Tools: ROS, PCL, Android, AWS, OpenCV, Eclipse, Visual Studio, Vim, Git, Subversion
Lab Tools: Oscilloscope, JTAG debugger, logic analyzer, spectrum analyzer, multimeter, ThermoStream, thermal chamber, SMT assembly, laser cutter, 3D printer, CNC

WORK EXPERIENCE

Texas Instruments, Dallas, TX, *Systems Applications Engineer*, 2012 – 2015.
Collaborated with digital designers, software developers, field/product/test engineers, marketers, and customers to support TI's catalog of ARM embedded microprocessors in the broad market space.

- Achieved deep, technical understanding of power, reset, and clock management architecture including ultra-low power modes, suspend/resume, DVFS, cpufreq, cpuidle, runtime PM for Linux and no-OS SDKs.
- Validated system functionality during silicon board bringups with focus on power distribution network, discrete and companion-PMIC power solutions, battery backup and charging, and timer modules.

- Lead automated bench characterization efforts for power management, thermal considerations, and DDR signal integrity across process, voltage, and temperature variables for datasheet specification.
- Managed production of Java-based tool for analyzing processor clock tree configurations and data import.
- Developed tools, user guides, and training materials to improve customer knowledge base.

NASA Jet Propulsion Laboratory, Pasadena, CA, *Intern*, 2011.
Performed research work for Flight System Avionics, on the Instrument ShAred Artifact for Computing (ISAAC) and SMAP projects. Implemented DSP algorithms in Verilog/VHDL to expand the library of computationally-intensive instrument control and computing functions for an FPGA-based platform.

CRES Interaction Lab, Los Angeles, CA, *Research Assistant*, 2010.
Conducted directed research under Dr. Maja Matarić, exploring human-robot interaction and social primitives through multi-modal activity modeling. Utilized ROS to model and validate the human perception of robot deictic gestures from head orientation, timing data, and dynamic feedback.

RELEVANT PROJECT EXPERIENCE

- *AfternoonCape* – prototyped an inexpensive power/thermal measurement cape for the BeagleBone Black to monitor real-time power consumption in any system equipped with current shunt resistors
- *SeaBeeIII AUV* – designed PCBs for sonar navigation, LiPo battery management, and interactive kill switch for use in an autonomous underwater vehicle for the international "RoboSub" competition.
- *Pool Safety Device* – collaborated with marketing and fine arts students to create a wireless electronic wristband alert system to prevent children from drowning in home swimming pools
- *Rocket Avionics Power System* – designed a fault-tolerant power distribution system for navigation, communication, and telemetry equipment in a hybrid-powered rocket mission to 100k+ ft apogee