Lucas B Spicer

250 Josefa Street, Apt 302
San Jose, CA 95110
Phone: 614 531 1600
luckyspicer@gmail.com
spicerrobots.com

Software Development Engineer

Apple, Inc.   April 2015 – Present
- Architect, design and implement custom frameworks to facilitate model based development and code generation
  - Lead small team developing model based development pipeline as Swift frameworks which involved DSLs, IDLs, meta-modeling, code generation, as well as prototyping using a variety of open source software
- Develop pure Swift core frameworks for Mac/iOS/Linux, especially related to network communication, data marshalling, and C interoperability

Embedded Systems Engineer

Kiva Systems (Amazon Robotics)   June 2012 – April 2015
- Design, implement, test and debug embedded software for Kiva Systems autonomous mobile robots.
- Develop application and network software for embedded Linux (C, GNU toolchain, Yocto, POSIX sockets, Python, Bash) as well as bare-metal applications for ARM Cortex-M chips and other devices
- Lead developer for Kiva's Drive Unit Safety Controller (Kiva's autonomous robot IEC 61508 safety monitor)
  - Performed testing, code coverage and static analysis using GoogleMock, GoogleTest, Gcov and Cppcheck
- Architect and lead developer of Kiva's autonomous robot fleet-level operation data collection process/program
  - Designed system where data is autonomously collected from thousands of widely distributed robots into an analytics database for use in performance monitoring, design verification and fault detection.
- Develop code and documentation to improve system manufacturability and autonomous testability

Power Electronics / R&D Co-op

GE Appliances   January 2009 – August 2011
- Conducted research regarding aggregate residential air conditioning demand response and home energy control

United States Patent 8,818,566	August 26, 2014
United States Patent 8,606,419	December 10, 2013
United States Patent 8,386,087	February 26, 2013
United States Patent 8,170,695	May 1, 2012

- Coded and designed embedded software modules to validate machine control hardware for next generation top-loading washing machines, among other testing, prototyping and documentation projects.

Education

J.B. Speed School of Engineering – University of Louisville   Louisville, KY
- M.Eng in Electrical Engineering with Highest Honors **4.0 GPA**   May 2012
- B.S. in Electrical Engineering with Highest Honors   **4.0 GPA**   August 2011

Certificates

Coursera
- Machine Learning by Stanford University on Coursera. Certificate earned on November 22, 2015. https://www.coursera.org/account/accomplishments/records/BBJ5ECCRMC9P
- Robotics, a 6-course specialization by University of Pennsylvania on Coursera. Specialization Certificate earned on August 8, 2016. https://www.coursera.org/account/accomplishments/specialization/certificate/XUXUGJYBBVZC

Other Experience

NASA University Student Launch Initiative   July 2011 – April 2012
- Led electronics and payload team in development of custom electronics (PCBs, sensors, harnesses, communication) and embedded software for the payload of the University of Louisville's high power competition rocket (5th out of 42 finish in inaugural year competition)

Capstone Design in Electrical and Computer Engineering   January 2011 – May 2011
University of Louisville, Louisville and Lexmark Inc.
- Lead five member ME and EE cross disciplinary senior design team
- Researched, designed, fabricated and tested a low-cost opto-reflective shaft encoder for brushed DC motors

Undergraduate Researcher in Computer Vision and Image Processing Lab   January 2010 – May 2011
University of Louisville, Computer Vision & Image Processing Lab, Louisville, KY
- Lead project to refurbish and restore both hardware and software in an out-of-use lab robot (ATRV mini)
- Initiated integration of computer vision software package (OpenCV) with the robot system

Hacking at Home   2008 – Present
- Developing Arduino, Raspberry Pi and hardware only based autonomous mobile robots
- Interfacing small LCD and VFD displays with battery and solar powered projects and homemade robots
- Teaching myself Free RTOS, XBee, Bluetooth, Android, 3-D modeling (Sketchup), etc. all for fun

Awards and Honors

- Lewis S. Streng Award for Master of Engineering Honor Graduate 2012
- Samuel T. Fife Award for Outstanding Master of Engineering Graduate in Electrical Engineering 2012
- University of Louisville IEEE Outstanding Student Award 2012
- Robert Craig Ernst Scholarship Award for Highest Honors Bachelor of Science, J.B. Speed School Spring 2011
- Samuel T. Fife Scholarship Award, EE department J.B. Speed School Spring 2010