# EDUCATION

Bachelor of Science, Electrical Engineering May 2014

Minor in Physics, concentration in Japanese Language

University of Florida, Gainesville, FL

GPA: 3.96/4.0

**ACADEMIA**

**Teaching Assistant**, Linear Control Systems Course and Lab August 2014 – Present  
University of Florida, Gainesville, FL

* + Conducted weekly lab sessions for students to gain experience using Matlab for linear controls applications
  + Taught students basic concepts, such as state space system modeling and lead and lag controller design
  + Graded homework and exams

**Computer Vision Programmer**, Machine Intelligence Laboratory August 2014 – Present  
University of Florida, Gainesville, FL

* + Designed and implemented SLAM algorithms through visual and odometer sensor fusion to assist a mobile robot navigate a course for the IEEE Autonomous Robot competition
  + Produced an undergraduate thesis on computer vision, Kalman filtering, and prospective geometry

**Optics in the City of Light REU Researcher**, Biophotonics Group June 2013 – July 2013  
Institut d’Optique, Palaiseau, France

* + Constructed 3-dimension Full-Field Optical Coherence Tomography setup to support a cell-level biological study
  + Characterized spherical aberration and image quality degradation as a function of conjugation position by programming LabVIEW control system and Matlab data-processing script

**NanoJapan REU Researcher**, Ajayan Lab June 2011 – July 2011  
Rice University, Houston, TX

* + Enhanced batteries and supercapacitors by creating new nanostructures and graphene coating using chemical vapor deposition
  + Grew and transferred graphene samples for international collaboration projects on graphene devices

**REU Researcher**, Materials Research Institute June 2011 – July 2011  
Pennsylvania State University, State College, PA

* + Designed and fabricated tunable microchip coils, using CST Microwave Studio to assess model feasibility and a Vector Network Analyzers for hardware testing
  + Scanned small-scale phantoms using an MRI machine and newly-designed 600MHz microchips to improve tools available to biologists and antenna designers, with results published in yearly journal

**Research Assistant**, Instrumentation and Imaging Laboratory for Biomechanics January 2011 – May 2012  
University of Florida, Gainesville, FL

* + Created and debugged LabVIEW programs that model the kinematics of multi-joint mechanical arms for National Instruments’ database
  + Modeled a functioning Klann Linkage system with dimensions similar to those of a “StrandBeest”
  + Constructed and developed software to control a pneumatic Instron tensile stress machine from basic components to be used in future engineering courses at the university

**INDUSTRY**

**Avionics Hardware Development and Integration Intern,** SpaceX August 2012 – August 2014

Hawthorne, CA

* + Developed Altium extensions in C# and Python with unsupervised learning algorithms for streamlining the avionics design process
  + Worked on thermal imaging systems on Falcon 9 Reusable to improve reliability and reduce cost
  + Designed harnesses and data acquisition circuit boards for flight on Falcon 9 Reusable and Dragon
  + Compiled data on various electronic interfaces for all current and future satellite missions
  + Developed and qualified proprietary avionics systems to improve safety and reliability of all future Falcon 9 and Falcon Heavy flights, using Matlab, C++, and Bash

**Engineering and Science Tutor**, instaEDU.com May 2013 – Present

Gainesville, FL

* + Taught science, math, and engineering concepts to students ranging in age from middle school to college
  + Designed and developed a proof-of-concept math training resource to visually teach students about solving equations

**Sponsored Engineer**, Integrated Product and Process Design Program August 2013 – May 2014

Stryker Sustainability Solutions at University of Florida, Gainesville, FL

* + Lead and worked with in a multidisciplinary team of engineers
  + Designed, manufactured, and tested a C-based embedded system and fixture to rapidly test the integrity of the circuitry inside a particular ultrasonic scalpel surgery tool

**Director of Energy and Environment**, The Dynamo Policy Research Group September 2010 – May 2012

University of Florida, Gainesville, FL

* + Published a policy recommendation on Smart Grid Systems in the “10 Ideas- Energy and Environment” publication and Roosevelt Institute’s peer-reviewed “Solutions for the South” online publication, where policy makers are known to extract ideas
  + Discussed political topics regarding Energy and Environment via the Dynamo’s blog for the university community to read and consider
  + Hosted an expert forum on Technological Innovations in Education at the University of Florida

**LEADERSHIP**

**Founder**, “Five for Tanzania” Charity Fundraiser for Rhotia Valley, Tanzania September 2010 - Present

University of Florida

* + Raised $2000 for the Rhotia Valley children’s home from the publicity of setting the fastest 400m while juggling five balls world record
  + Raised $1000 for tsunami victims in Japan from the publicity of setting the fastest 400m while juggling five balls world record

**Vice President**, “Objects in Motion” (Juggling Club) August 2010 – May 2011

University of Florida

* + Designed novel juggling props and developed mass production techniques
  + Designed choreography for live performances in Gainesville

**Space Florida Academy**, NASA-oriented engineering program sponsored by Lockheed Martin March 2011

Cape Canaveral, FL

* + Designed, constructed, and launched a weather balloon payload during the week of Spring break with numerous other engineers from Florida in order to stream images of Earth from the stratosphere
  + Worked and interacted with engineers and physicists from NASA, Lockheed Martin, and United Launch Alliance throughout multiple panel discussions

**ACHIEVEMENTS**

Undergraduate financed 100% of college tuition with merit-based scholarships August 2010 - present **Guinness World Record Holder**, Fastest mile while juggling 5 objects July 2012

**Guinness World Record Holder**, Fastest 400m while juggling 5 objects July 2011

**Guinness World Record Holder**, Fastest 5k while juggling 5 objects May 2011

Commissioned Student Ambassador to Miyazu, Japan for the city of Delray Beach, FL April 2008 – June 2010

**AFFILIATIONS**

**Member,** IEEE Professional Engineering Society October 2010 – Present

**Member**, Student Small Satellite Design Club November 2010 – December 2011

**Benton Engineering Council Representative,** Gator Amateur Radio Club January 2011 – December 2011

Licensed Amateur Radio Technician January 2011 – Present

**PUBLICATIONS**

* **Feldman M**, Lanagan M, Perini S. MRI microcoils for imaging individual cells. *Annual Research Journal Electrical Engineering Research Experience for Undergrads*. IX:169-179, 2011 August
* Legel L, **Feldman M**. Smart grid deployment plans for Florida’s utilities. 10 Ideas for Energy & Environment. 14-15, 2011 July
* **Feldman M**, Gullapalli H, Reddy LM, Vajtai R, Ajayan PM. Fluorine-etched nanostructures for energy storage applications. *RQI Symposium*. Rice University, 2012 August 3.