Brandon Joel Gonzalez – Curriculum Vitae

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Career Objectives

Interested in the development and innovation of electronics engineering and related fields. Pursuing a doctorate in electrical and computer engineering, with a long-term goal of teaching and research at a university. Love of learning and helping guide others to their fullest potential.

Education

Carnegie Mellon University — College of Engineering

- Ph.D Student in ***Electrical and Computer Engineering*** — Entered Fall 2021
  - Research Advisor: Dr. L. R. Carley
  - Research Interests: embedded systems; wireless sensing and communications

University of Pennsylvania — School of Engineering and Applied Science (SEAS)

- M.S.E. in ***Robotics*** — Spring 2021
- B.S.E. in ***Computer Science***, minor in ***Mathematics*** — Fall 2019 — Cum Laude

Experience

UPenn SEAS — CIS/ESE Teaching Assistant

- TA for the Department of Computer and Information Science (CIS) & Department of Electrical and Systems Engineering (ESE)
- Responsibilities include: lecturing, recitations, lab and review sessions, lab and office hours, explanation videos, forum monitoring, staff meetings, grading, project advising, development of course labs, projects, and curricula
- Semesters as head TA denoted with * and semesters online denoted with ^
- TA history:
  - CIS240/CIT593: ***Introduction to Computer Systems*** — Fall 2018, Spring 2019, Summer 2019^
    - Introductory systems course covering topics from CMOS logic gates to architecture design to operating systems programming
  - CIS380/548/CIT595: ***Operating Systems*** — Fall 2019, Spring 2020*^, Summer 2020*^
    - Advanced systems course exploring design and implementation of operating systems, primarily Unix-based, in the C programming language
  - CIS371/501: ***Computer Architecture*** — Fall 2019, Spring 2020^
    - Advanced systems course exploring design and optimization techniques in modern computer architecture, with labs in Verilog
  - ESE190/M&TSI: ***Introduction to Hardware/Software Lab*** — Spring 2019, Summer 2021*^
    - Introductory laboratory course exploring the Arduino platform, primarily for students without engineering background
  - ESE350/519: ***Embedded Systems Lab*** — Fall 2020^, Spring 2021*^
    - Advanced laboratory course covering the foundations and design of embedded systems platforms, across both hardware and software levels
  - ESE450/451: ***ESE Senior Design*** — Fall 2019, Spring 2020^, Fall 2020*^, Spring 2021*^
    - Two-part senior capstone project series for students in the Electrical and Systems Engineering department and related majors

Skills and Coursework

Languages: Native in English, fluent/heritage in Spanish, elementary in French
Key Courses Taken: Operating Systems, Computer Architecture, Embedded Systems, Mechatronic Systems, Signal Processing, Control Systems, Digital/Analog/RF Electronics
Technologies Learned/Utilized:

- Software
  - Programming languages including C, C++, Python, MATLAB
  - Hardware description languages including Verilog
  - Software development tools including Simulink, ROS
  - Operating systems tools including Unix shells, FreeRTOS
- Hardware
  - Microcontrollers including ATmega328P, ESP32
  - Circuit simulation tools including Cadence, SPICE
  - PCB design tools including Altium
  - Various electrical components and devices including resistors, capacitors, inductors, diodes, AC and DC currents, MOSFETs, BJTs, op-amps, transducers, sensors, servomotors, DC motors, batteries, power supplies, voltage regulators, etc.

Activities and Interests

- SEAS Orientation Peer Adviser for Class of 2022 (CIS) and Class of 2023 (CMPE)
- SEAS Mentor for First-Year Robotics Graduate Students in Spring 2021
- Head of Hardware team for PennApps hackathon from Spring 2019 to Spring 2021, organized with Major League Hacking (MLH)
- Student member of the organizing committee for the 2019 CIS Diversity Summit
- Student member of the ECE Diversity, Inclusion, and Outreach Committee

Awards and Recognitions

- Recipient of the 2017 Penn Undergraduate Research Mentoring (PURM) Grant
- Recipient of the 2018 Penn Engineering Exceptional Service Award
- Recipient of the 2019 Littlejohn Scholars Summer Research Grant
- 2019-20 J.P. Eckert Fellow
- 2020 inductee of the CIS TA Hall of Fame
- Recipient of the Summer 2020 TA Award for Excellence in Student Support with Distinction
- 2021 ESE Diversity, Equity, and Inclusion Fellow
- Honorable Mention for the 2021 Penn Engineering Outstanding Teaching Award
- 2021-22 Carnegie Institute of Technology Dean's Fellow