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 Advisors: Dr. L. R. Carley, Dr. Anthony Rowe
  ➢ 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

<u>Skills and Coursework</u>

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.

<u>Activities and Interests</u>

- ❖ 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 <u>PennApps</u> hackathon from Spring 2019 to Spring 2021, organized with <u>Major League Hacking</u> (MLH)
- ❖ Student member of the organizing committee for the <u>2019 CIS Diversity Summit</u>
- ❖ Student member of the <u>ECE Diversity, Inclusion, and Outreach Committee</u>
- ❖ <u>Build18</u> Officer for the 2023 Season
- ❖ 2022-23 <u>CMU Robotics Club</u> Graduate Student Officer

<u>Awards and Recognitions</u>

- ❖ Recipient of the 2017 <u>Penn Undergraduate Research Mentoring (PURM) Grant</u>
- ❖ Recipient of the 2018 <u>Penn Engineering Exceptional Service Award</u>
- ❖ Recipient of the 2019 <u>Littlejohn Scholars Summer Research Grant</u>
- ❖ 2019-20 <u>J.P. Eckert Fellow</u>
- ❖ 2020 inductee of the <u>CIS TA Hall of Fame</u>
- ❖ Recipient of the <u>Summer 2020 TA Award for Excellence in Student Support with Distinction</u>
- ❖ 2021 <u>ESE Diversity, Equity, and Inclusion Fellow</u>
- ❖ Honorable Mention for the <u>2021 Penn Engineering Outstanding Teaching Award</u>
- ❖ 2021-22 <u>Carnegie Institute of Technology Dean's Fellow</u>
- ❖ 2022 inductee of <u>Eta Kappa Nu (HKN), Sigma Chapter at Carnegie Mellon University</u>