

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* – August 2021 - Present
 - Research Advisors: Dr. L. Richard Carley, Dr. Anthony Rowe
 - Research Interests: embedded systems, electronics design, mechatronics

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

- ❖ M.S.E. in *Robotics* – May 2021
- ❖ B.S.E. in *Computer Science*, minor in *Mathematics* – December 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
 - Software development tools including Simulink, ROS
 - Hardware description languages including Verilog
 - Operating systems tools including Unix shells, FreeRTOS
- ❖ Hardware
 - Microcontrollers including ATmega328P, ESP32/ESP8266
 - Computing boards including Raspberry Pi, Jetson Nano
 - IC design tools including Cadence, SPICE
 - PCB design tools including Altium

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
- ❖ Build18 Officer for the 2023 Season
- ❖ 2022-23 CMU Robotics Club Graduate Student Officer

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
- ❖ 2022 inductee of Eta Kappa Nu (HKN), Sigma Chapter at Carnegie Mellon University