

## 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 (CIT)**

- ❖ Ph.D Student in *Electrical and Computer Engineering* – August 2021 - Present
  - Research Advisors: Dr. L. Richard Carley
  - Research Interests: embedded systems, electronics design, RF engineering

#### **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

#### **Teaching Assistant – CMU CIT and UPenn SEAS**

- ❖ TA for the Department of Computer and Information Science (CIS), Department of Electrical and Systems Engineering (ESE), Department of Electrical and Computer Engineering (ECE)
- ❖ 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:
  - CIT – 18-429/729: *Board-Level RF Systems for IoT* – Fall 2022
    - Experimental laboratory course exploring RF engineering concepts, including transmission lines, antenna design, MIMO, SDR, and beamforming
  - SEAS – 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
  - SEAS – 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
  - SEAS – CIS371/501: *Computer Architecture* – Fall 2019, Spring 2020^
    - Advanced systems course exploring design and optimization techniques in modern computer architecture, with labs in Verilog
  - SEAS – 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
  - SEAS – 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

- SEAS – 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 language tools including Verilog, Vivado
  - Operating systems tools including Unix shells, FreeRTOS
- ❖ Hardware
  - Microcontrollers including Arduino, Espressif
  - Computing boards including Raspberry Pi, Nvidia Jetson
  - IC design tools including Cadence, SPICE
  - PCB design tools including Altium, EAGLE
  - CAD tools including Fusion 360, Solidworks

## **Activities and Interests**

- ❖ SEAS Orientation Peer Adviser for Class of 2022 (CIS) and Class of 2023 (CMPE)
- ❖ Head of Hardware team for PennApps hackathon from Spring 2019 to Spring 2021, organized with Major League Hacking (MLH)
- ❖ Student member of the ECE Diversity, Inclusion, and Outreach Committee
- ❖ 2022-23 ECE Representative of TechSpark Student Committee
- ❖ Build18 Officer for the 2023 Season
- ❖ 2022-23 CMU Robotics Club Graduate Student Officer
- ❖ 2022-23 IEEE CMU Chapter Graduate/Research Committee Chair
- ❖ 2022-23 Officer of the Eta Kappa Nu (HKN), Sigma Chapter at Carnegie Mellon University

## **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
- ❖ Carnegie Institute of Technology Dean's Fellow
- ❖ 2022 inductee of the Eta Kappa Nu (HKN), Sigma Chapter at Carnegie Mellon University