

B. JOEL GONZALEZ

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EDUCATION

Carnegie Mellon University (CMU)

College of Engineering

Pittsburgh, PA

2021 - Present

- Ph.D. Candidate in *Electrical and Computer Engineering*
- M.S. in *Electrical and Computer Engineering*, concentration in *Integrated Systems* — May 2024
- Research Advisor: Dr. L. Richard Carley
- Research Interests: integrated systems design, device fabrication, RF engineering, metrology and instrumentation

University of Pennsylvania (UPenn)

School of Engineering & Applied Science

Philadelphia, PA

2015 - 2021

- M.S.E. in *Robotics* — May 2021
- B.S.E. in *Computer Science*, minor in *Mathematics* — December 2019

TEACHING ASSISTANTSHIPS

Semesters as lead TA denoted by *.

- CMU — 18-427/727: *Board-Level RF Systems for IoT* — Fall 2022*, Fall 2023*, Fall 2024*, Fall 2025*
- CMU — 18-540/745: *Rapid Prototyping of Computer Systems* — Spring 2023
- UPenn — ESE450/451: *ESE Senior Design* — Fall 2019, Spring 2020, Fall 2020*, Spring 2021*
- UPenn — ESE350/519: *Embedded Systems Lab* — Fall 2020, Spring 2021*
- UPenn — ESE190/M&TSI: *Introduction to Open-Source Hardware/Software Lab* — Spring 2019, Summer 2021*
- UPenn — CIS371/501: *Computer Architecture* — Fall 2019, Spring 2020
- UPenn — CIS380/548/CIT595: *Operating Systems* — Fall 2019, Spring 2020*, Summer 2020*
- UPenn — CIS240/CIT593: *Introduction to Computer Systems* — Fall 2018, Spring 2019, Summer 2019

WORKS

- B.J. Gonzalez, E. Bourcart, J.K. Wirant, M. Juan, J. Wang, M.T. Moneck (2025). "A low-cost, open-source maskless photolithography stepper for microfabrication". arXiv preprint arXiv:2510.15082.
- S. Hussain, B.J. Gonzalez, L. Chomas, and L.R. Carley (2025, December 2). "Anisotropic High Aspect Ratio Etching of Sub-100nm Diameter Columns in Silicon Oxide" [Poster presentation]. Materials Research Society Fall 2025 Meeting, Boston, MA, United States.
- B.J. Gonzalez, Y.I. Chen, J.K. Wirant, J.S. Kunselman, E. Bourcart, M.T. Moneck, T. Srimani, and L. Pileggi (2026, May 24-27). "The Hacker Fab: An Open-Source Initiative for Nanofabrication Education". ISCAS 2026, Shanghai, China.
- B.J. Gonzalez, T.J. Zajdel, and L.R. Carley (2026, May 24-27). "Leveraging Inexpensive Lab Tools for Hands-on RF Systems Course". ISCAS 2026, Shanghai, China.

EXPERIENCE

MIT Lincoln Laboratory

Division of Communication Systems

Lexington, MA

May 2023 - August 2023

- Summer 2023 research intern working on RF systems design and analysis for communication systems
- Programmed in Python and used RF hardware to analyze RF networks, spectra, and phase noise
- Internship completed as part of employer sponsorship via GEM Fellowship

ACTIVITIES, AWARDS, AND RECOGNITIONS

CMU:

- Carnegie Institute of Technology Dean's Fellow
- Recipient of the *GEM Fellowship*, with sponsorship from *MIT Lincoln Lab* for Summer 2023
- Completed the *Future Faculty Program* in Fall 2022 (Eberly Center for Teaching Excellence and Educational Innovation)
- Selected to participate in the 2022 *NextProf Pathfinder* workshop hosted by UMich and UCSD
- 2022-25 CMU Robotics Club Officer

UPenn:

- 2019-20 CIS *J.P. Eckert Fellow*
- 2020 inductee of the *CIS Max Mintz Undergraduate TA Hall of Fame*
- Honorable Mention for the 2021 Penn Engineering Outstanding Teaching Award
- Recipient of the *Summer 2020 TA Award for Excellence in Student Support with Distinction*
- Recipient of the 2019 *Littlejohn Scholars Summer Research Grant*
- Recipient of the 2018 *Penn Engineering Exceptional Service Award*
- Recipient of the 2017 *Penn Undergraduate Research Mentoring (PURM) Grant*