

Cohen Henderson

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SUMMARY

Computer engineering researcher and educator with six years of combined postdoctoral, university research, and graduate instructional experience across semiconductor devices, **mixed signal integrated circuits**, embedded systems, VLSI, SoC architectures, verification, and hardware security. Ph.D. trained in **Computer Engineering** with **peer reviewed scholarship**, conference presentations, reproducible experiments, and hands on hardware prototyping. Contributed technical aims, preliminary data, experimental plans, and scholarly writing for competitive research proposals and externally supported projects. Taught electrical and computer engineering laboratories and courses, mentored undergraduate and graduate researchers, supported curriculum development, and advised technical projects. Collaborative work with academic, government, and industry partners supports an **independent research** agenda linking device aware design, edge hardware, secure systems, and effective engineering education.

EXPERIENCE

Postdoctoral Research Fellow, Computer Engineering

September 2024 - Present

Carolina Advanced Microsystems Institute

Raleigh, NC

Lead research across semiconductor devices, mixed signal ICs, embedded platforms, VLSI, and **SoC architectures** while supporting proposals, publications, **student mentorship**, teaching, and external partnerships.

- Advanced semiconductor and SoC experiments with reproducible documentation for externally supported research programs.
- Designed **FPGA** prototypes using RTL workflows, microcontrollers, instrumentation, and hardware validation methods.
- Contributed technical aims, preliminary data, and experimental plans for competitive **research proposals**.
- Produced **peer reviewed scholarship** and conference presentations for academic and external research audiences.
- Mentored junior researchers through experimental design, debugging, validation, and clear technical writing.
- Supported engineering instruction, curriculum activities, seminars, research administration, and **academic service** initiatives.

Research Scientist, Integrated Systems Laboratory

August 2022 - August 2024

Atlantic State University

Norfolk, VA

Directed integrated systems research involving **semiconductor devices**, mixed signal circuits, **embedded systems**, and VLSI architectures, with contributions spanning proposal development, scholarship, mentoring, and laboratory instruction.

- Advanced integrated systems research with reproducible experiments spanning devices, circuits, and embedded platforms.
- Verified **RTL** and FPGA hardware through simulation, instrumentation, measurement, and structured test workflows.
- Prepared preliminary data and technical narratives supporting competitive **external funding** submissions.
- Presented peer reviewed findings at conferences and built relationships with interdisciplinary research partners.
- Guided students through hardware validation, debugging, experimental planning, and research communication.
- Supported **curriculum development**, laboratory teaching, seminars, and academic research administration.

Graduate Research Assistant and Instructor of Record

August 2020 - July 2022

Piedmont Polytechnic University

Charlotte, NC

Combined graduate research with independent course instruction, developing semiconductor and embedded systems studies while mentoring students, supporting proposals, and advancing engineering curriculum objectives.

- Conducted semiconductor and **embedded systems** research with documented experimental methods and technical findings.
- Built and tested hardware prototypes using RTL, FPGA platforms, microcontrollers, and laboratory instrumentation.
- Contributed experimental plans, preliminary results, and scholarly writing for research funding proposals.
- Taught engineering laboratories and courses using structured demonstrations, applied exercises, and assessment feedback.
- Mentored undergraduate researchers through design reviews, debugging sessions, technical writing, and presentations.
- Supported **curriculum development**, seminars, research administration, and department service activities.

Graduate Research Assistant, Semiconductor Systems

August 2018 - July 2020

Mid Atlantic University

Richmond, VA

Performed supervised semiconductor systems research focused on device aware design, integrated circuits, embedded hardware, and experimental validation while building a foundation for teaching and scholarly collaboration.

- Investigated semiconductor systems through documented simulation, prototyping, measurement, and validation workflows.
- Implemented microcontroller and FPGA experiments supporting **embedded systems** research and hardware demonstrations.
- Supported IC layout, RTL development, **verification**, and testing across laboratory research activities.
- Prepared technical results and literature based content for peer reviewed research presentations.
- Assisted student mentoring through laboratory guidance, debugging support, and research communication.
- Contributed to seminars, curriculum activities, research administration, and **academic service** work.

PROJECTS

Secure Edge Hardware Research Platform 📅 2025

Developed a research platform concept connecting hardware security, embedded systems, edge computing hardware, and reproducible validation for future interdisciplinary studies.

Mixed Signal IC Verification Study 📅 2023

Investigated mixed signal integrated circuit design, simulation, verification, testing, and device aware methods through academic laboratory research and technical reporting.

LEADERSHIP & AWARDS

- Graduate Research Excellence Award, Piedmont Polytechnic University, 2022
- Reviewer, embedded systems and hardware security conference workshops, September 2025 - Present
- Instructor of Record recognition through graduate engineering teaching, Piedmont Polytechnic University, 2022

EDUCATION

Ph.D. in Computer Engineering

2022

Piedmont Polytechnic University GPA: 4.0

Charlotte, NC

Coursework: Semiconductor devices, mixed signal IC design, VLSI architecture, hardware security

Bachelor of Science in Computer Engineering

2018

Mid Atlantic University GPA: 4.0

Richmond, VA

Coursework: Microprocessor design, embedded systems, digital logic, integrated circuit testing

CERTIFICATIONS

- University Teaching Certificate in Engineering Education 📅 2021
- Ph.D. in Computer Engineering 📅 2022

TECHNICAL SKILLS

- **Semiconductor Design:** Semiconductor devices, microchip design, semiconductor materials
- **Integrated Circuits:** Digital IC design, mixed signal IC design, integrated circuit layout
- **VLSI and ASIC:** VLSI, ASIC, SoC architectures
- **Embedded Hardware:** Embedded systems, microcontrollers, microprocessors
- **Digital Logic:** RTL, FPGA, digital design
- **Verification and Testing:** Simulation, verification, hardware testing
- **Secure Hardware:** Hardware security, secure embedded systems, security verification
- **Edge and Real Time:** Edge computing hardware, real time systems, low latency systems
- **Research Methods:** Experimental design, reproducible research, device aware design
- **Academic Research:** Peer reviewed publications, conference presentations, interdisciplinary collaboration
- **Funding Development:** Research proposals, competitive grants, external funding
- **Engineering Education:** Course instruction, laboratory teaching, curriculum development

SKILLS

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|--------------------------|----------------------------|---------------------|---------------------|
| • Semiconductor devices | • ASIC | • Microprocessors | • Edge computing |
| • Microchip design | • SoC and NoC | • Microcontrollers | • Hardware security |
| • Mixed signal IC design | • IC layout | • Embedded systems | • External funding |
| • VLSI | • Verification and testing | • Real time systems | |

PROFESSIONAL AFFILIATIONS

- Embedded systems and hardware security conference workshop reviewer, 2025 - Present
- Interdisciplinary academic, government, and industry research collaboration participant
- Engineering education and curriculum development contributor

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST