MARQUISE PULLEN

Adjunct Professor of Computer Science · Doctoral Candidate · Senior Software Engineer

Mount Holly, NJ · 609.346.1499 · marquise.pullen@gmail.com · linkedin.com/in/marquisepullen · gitlab.com/pullenm

ACADEMIC PROFILE

Engineer-educator with 9+ years teaching computer science at the university level and 16+ years of federal engineering and technical leadership. Research in electro-optical switchable filters and bio-inspired vision for GPS-denied navigation, funded by $230K in 2 In-house Laboratory Independent Research awards. Teaching centers on bringing production practice — web, cloud, DevOps — into the undergraduate classroom.

RESEARCH INTERESTS

- Electro-optical switchable filters and tunable photonics
- STEM education research and teaching innovation
- Bio-inspired vision sensing for navigation and detection
- Cloud computing, DevOps, and software engineering practice
- Vision-based navigation in GPS-denied environments
- Workforce development and cybersecurity education

EDUCATION

Ph.D. Electrical Engineering — Computer Vision & Machine Learning — **In progress ~2026–2027**
Drexel University

M.S. Electrical Engineering — Controls & Digital Signal Processing — **2016**
Drexel University

M.S. Mechanical Engineering — Dynamics & Robust Controls — **2009**
Drexel University

B.S. Electrical Engineering — Electronics & Controls — **2006**
Drexel University

ACADEMIC APPOINTMENTS

Adjunct Professor, Computer Science

Sep 2018 – Present

Rowan University · Glassboro, NJ

- Teach Web Programming and Computer Science & Programming (CS 04103) — production-grade web development (HTML, CSS, JavaScript/TypeScript, React, Node.js, REST) via a multi-sprint MERN-stack capstone, plus core CS fundamentals.
- Instruct 69 students per year across multiple sections with a pass rate of 86%; designed the Web Programming curriculum from scratch.
- Built a teaching demonstration project using agentic AI (Ollama, ChromaDB, FastAPI, RAG) to introduce students to practical AI engineering.
- Built an LLM-based grading assistant and Model Context Protocol (MCP) server (39 tools, a review web app, OAuth 2.1) for CS 04103, to speed grading and give class-level performance awareness; the AI proposes each score and each is approved by hand before posting.
- Cut the grading window for a two-section, 45-student midterm by 65–76% (about 45 hours to 11–16), reduced hand-entered grades by 98% (91 to 2), and approved 98.5% of 270 AI-scored answers unchanged.
- Produce recorded lectures and short tutorial videos (OBS Studio) for Computer Science & Programming, Introduction to Web Development, and Web Programming, shared with students through Canvas.

Senior Adjunct Professor, Computer Science

Jan 2017 – Present

Rowan College at Burlington County · Mount Laurel, NJ

- Teach Introduction to Computer Science I & II in C++ — fundamentals, data structures, and object-oriented programming.
- Designed and launched the college's first Cloud Computing and DevOps course sequence, building curriculum, lab infrastructure, and assessments from the ground up.
- Structured the curriculum around real production tooling: GitLab CI/CD, Terraform, Ansible, GCP, microservices, and observability (Prometheus, Grafana, Loki).
- Teach Advanced Cloud Systems & DevOps (CIS-160), part of that sequence, since Spring 2025 (3 terms).

Doctoral Teaching & Research Fellow

Jan 2017 – Jun 2023

Drexel University · Philadelphia, PA

- Instructor/TA across 13 undergraduate engineering course offerings — taught Computation Lab II (MATLAB programming for engineers) as instructor, and Senior Design I–III, Renewable Energy, and Solar Energy Engineering as Teaching Fellow; supported the first fully-remote engineering course pre-COVID.
- Helped modernize the ECE senior design program (30+ teams/year), critiquing technical presentations, proposals, and demonstrations to improve project readiness.
- Conducted graduate research in the Nanophotonics+ Lab on electro-optical switchable filters, publishing two peer-reviewed papers.

ExPERTS Teaching Fellow

2017 – 2018

Experiential Practices in Education Research and Teaching in STEM — Drexel CASTLE

- STEM education fellowship placing graduate engineers in the high school classroom; taught and co-developed STEM lessons alongside the classroom teacher.
- Run under Drexel's CASTLE, directed by Dr. Adam K. Fontecchio — also my doctoral advisor and co-author on both publications.

COURSES TAUGHT

Computer Science & Programming	Rowan University · CS 04103 · Teaching now · 12 terms
Advanced Cloud Systems & DevOps	Rowan College at Burlington County · CIS-160 · Next: Spring 2027 · 3 terms · latest Summer 2026 · Part of the college's first Cloud & DevOps sequence

Introduction to Web Development	Rowan University · CS 10310 · 7 terms · latest Spring 2026
Web Programming	Rowan University · CS 04305 · Next: Spring 2027 · 2 terms · latest Spring 2026 · Curriculum designed from scratch
Introduction to Cloud Computing	Rowan College at Burlington County · CIS-113 · 1 term · latest Fall 2025 · Part of the college's first Cloud & DevOps sequence
Principles of Data Structures	Rowan University · CS 04225 · 2 terms · latest Spring 2025
Introduction to Computer Science I	Rowan College at Burlington County · CSE 110 · 8 terms · latest Fall 2023
Senior Design Project III	Drexel University · ECE 493 · 2 terms · latest Spring 2021
Senior Design Project II	Drexel University · ECE 492 · 2 terms · latest Winter 2021
Senior Design Project I	Drexel University · ECE 491 · 3 terms · latest Fall 2020
Solar Energy Engineering	Drexel University · ECEP 480 · 2 terms · latest Winter 2019
Evaluation & Presentation of Experimental Data II	Drexel University · ENGR 202 · 1 term · latest Summer 2018
Introduction to Computer Science II	Rowan College at Burlington County · CSE 111 · 2 terms · latest Spring 2018
Introduction to Renewable Energy	Drexel University · ECEP 380 · 2 terms · latest Fall 2017 · First fully-remote engineering course, pre-COVID
Computation Lab II	Drexel University · ENGR 122 · 1 term · latest Winter 2017

RESEARCH EXPERIENCE

Graduate Researcher, Nanophotonics+ Lab — 2017 – Present

Drexel University

- Electro-optical switchable filters (H-PDLC) for spectral line emission detection and bio-inspired visual sensing; two peer-reviewed publications.
- Doctoral advisor: Dr. Adam K. Fontecchio.

Research Engineer — Positioning, Navigation & Timing — 2009 – 2022

U.S. Army DEVCOM C5ISR Center (formerly CERDEC)

- Vision-navigation techniques for GPS-denied environments; led multi-year defense research projects and oversaw test-platform design for PNT field testing.
- Real-time geospatial overlays fusing INS/IMU and Doppler streams at 60 Hz to surface sensor outages during live Blackhawk flight tests.

GRANTS & FUNDED RESEARCH

In-house Laboratory Independent Research (ILIR) — $100K — 2020

U.S. Army · Spectral Signature Beacon Navigation

- Principal investigator / project leader.

In-house Laboratory Independent Research (ILIR) — $130K — 2018

U.S. Army · H-PDLC Bio-inspired Vision Navigation

- Principal investigator / project leader.

PUBLICATIONS

- Pelleg, B., Steinhauser, C., Pullen, M., Linden, J., & Fontecchio, A. “Electrically switchable electro-optic filters for spectral line emission detection.” Applied Optics 60, 1059–1067 (2021). [link]

- Pullen, M. N., & Fontecchio, A. K. “Bio-inspired visual sensing enhances imaging techniques using integrated electro-optical switchable filters.” SPIE Vol. 10895 (2019). [link]

PRESENTATIONS

Bio-inspired visual sensing enhances imaging techniques using integrated electro-optical switchable filters — **Feb 2019**
SPIE Photonics West · First author

Army RDEC research review — H-PDLC ILIR, Electronics research area — **Nov 2018**
National Academies of Sciences

FELLOWSHIPS, HONORS & AWARDS

- ILIR (2020) — Spectral Signature Beacon Navigation, $100K
- Milton Shaw Fellowship (2019–2020) [link]
- ILIR (2018) — H-PDLC Bio-inspired Vision Navigation, $130K
- ExPERTS Fellowship — Experiential Practices in Education Research and Teaching in STEM, Drexel CASTLE (2017–2018) [link]

CERTIFICATIONS

- AWS Certified Solutions Architect – Associate — Amazon Web Services · Issued Jan 2026
- DevSecOps Technical Accelerator Program (DSO-TAP) – Practitioner, Cohort 3 — Lockheed Martin · CI/CD · Cloud · Security · DevOps · Agile · Graduated Jan 2026
- DAWIA Acquisition Professional — Systems Engineering (Levels I, II, III) — U.S. Army
- Active Secret U.S. Security Clearance — U.S. Department of Defense

PROFESSIONAL EXPERIENCE

Product Owner · Technical Lead — **Jul 2026 – Present**
Lockheed Martin — CyberQuest Academy

Technical Lead — **Dec 2025 – Jul 2026**
Lockheed Martin — CyberQuest Academy

Senior Software Engineer — **Nov 2022 – Present**
Lockheed Martin — Display Department

Senior Full-Stack Engineer — **Nov 2024 – Nov 2025**
Lockheed Martin — CyberQuest Academy

Electrical Engineer — **Apr 2009 – Nov 2022**
U.S. Army DEVCOM C5ISR Center (formerly CERDEC) — PNT Division

Vehicle Integration Lead — **Nov 2006 – Apr 2009**
U.S. Army CERDEC — C4ISR On-The-Move

Co-op — Electrical Engineering — **Fall 2004 – Winter 2005**
City of Vineland Electric Utility

Co-op — Electrical **Fall 2003 – Winter 2004**
AFG Industries

Co-op — Civil Engineering **Fall 2002 – Winter 2003**
Lord, Worrell & Richter, Inc.

SERVICE & MENTORSHIP

- Curriculum design — authored Rowan University's Web Programming course and RCBC's first Cloud Computing and DevOps sequence, including lab infrastructure and assessments.
- ECE senior design program modernization at Drexel — reviewed proposals, presentations, and demonstrations for 30+ teams per year.
- Supported Drexel's first fully-remote engineering course offering, pre-COVID.
- Mentorship of early-career technologists through the CyberQuest Academy platform (770+ users, 100+ classrooms).