John William Lynch, Ph.D.

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PERSONAL SUMMARY

Engineering and computing education researcher and instructor (Ph.D., 2026) with experience designing and teaching computer science courses for majors, non-majors, and non-traditional learners, from middle school through graduate level. Built and maintain a full-stack learning platform used by educators and students in Chicago and Ireland. Led graduate-student governance, managed departmental grant budgets, and prepared a federal grant proposal. Combines discipline-based education research with hands-on curriculum, software, and team leadership to reduce barriers to learning computer science. Versatile and effective worker that brings deep computer science expertise to both building software and teaching it, from introductory computer science topics, advanced database design and data structures, to full-stack application development.

EDUCATION

Ph.D., Engineering and Computing Education, University of Cincinnati 2026

Dissertation: An Exploratory Analysis of Technical Communication and Spatial Skills Among Engineering Students (Advisor: Dr. Sheryl Sorby)

M.S. (2020) and B.S. (2019), Computer Science and Software Development, DePaul University

WORK EXPERIENCE

Full-Stack Application Engineer, Freelance Spring 2022 – Present

- Designed and built a scalable full-stack Spatial Visualization Learning Management System with teacher and student accounts, interactive spatial visualization content, timed auto-graded quizzes, course creation, and in-app surveys for real-time user feedback.
- Designed a time-management tracking application for local Chicagoland architects to create projects with phases. System has embedded forecasting systems so projects of similar size, duration, and price can be compared to generate real-time statistics on current trends for architects. System allows addition of various workers that can utilize hour tracking systems.
- Built an administrative backend that tracks teacher and student progress and auto-generates interactive reports for quantitative and qualitative analysis.
- Live demos of all applications accessible at personal website (lynchjohn98.com).

Computer Science Curriculum Specialist, Northwestern University (CECSE) Fall 2021 – Winter 2022

- Supported Chicagoland educators teaching CS fundamentals in Swift, helping create and implement lectures, labs, quizzes, and assignments for diverse classrooms under tight deadlines.

Web Developer Intern, Covert Nine Summer 2019

- Built and maintained client WordPress sites (Wells-Lamont, RiotFest) in JavaScript, jQuery, and HTML/CSS; joined client meetings to translate requests into code and wrote the test report for a new block system.

Assistant Tutor, Gear UP, SENN High School; Peer Guide, DePaul College Connect 2018 – 2019

- Tutored high school students in MIT Scratch, math, and science, and in WordPress and introductory PHP (variables, loops).

TEACHING & CURRICULUM DEVELOPMENT

Taught 15+ courses at six institutions: University of Cincinnati, DePaul, Northwestern, Illinois Institute of Technology, San Diego Global Knowledge University, and Computer Systems Institute.

Developer & Adjunct Instructor, CS2024C: Data Structures & Algorithms, University of Cincinnati 2024

- Designed the course around core data structures, algorithm strategies, and performance metrics with real-world applications.

Instructor, CS4092: Database Design and Systems, University of Cincinnati 2024, 2026

- Taught relational algebra, ER models, SQL, normalization, indexing, and concurrency in hybrid sessions; students built a working application in teams of four.

Developer & Instructor, Application Development with Swift Playgrounds, Northwestern University 2021 – 2022

- Created a six-week iPad course for adult beginners; students designed and presented a four-screen app solving a problem in their community.

Instructor, CSC300 Data Structures I, CSC242 Intro CS II, CSC281 Java Workshop, DePaul University 2021 – 2022

- Wrote labs, assignments, lectures, tutorial videos, and exams in Java and Python, in person, online, and asynchronous formats.

Developer & Instructor, MDI117–120 Mobile Dev (Android), San Diego Global Knowledge Univ. 2026

- Lead the final courses (automated testing, JUnit, UI/UX and API testing) and advise capstones for veterans and non-traditional students.

Graduate Teaching Assistant, ENED 1100/1120 Engineering Design Thinking, University of Cincinnati 2022 – 2023

- Oversaw multiple ~70-student sections, supervised 3-4 undergraduate TAs, taught coding sessions (Python, MATLAB, LabVIEW), and coordinated TA professional development.
- Served as impromptu lead for hundreds of students for their end-of-semester demonstration, managing the check-in application for stations, tasks, and grading.

Developer & Instructor, DePaul University 2019 – 2021

- Taught Introduction to Computer Science I / II to first-year computer science and accounting students at DePaul University.
- Taught Introduction to Data Structures and Workshop in Java to undergraduate computer science students; course covered advanced eclipse workspace usage, basics of sorting algorithms, and advanced sorting algorithm techniques.

Developer & Instructor, Computer Systems Institute 2019 – 2022

- Instructor: UI Design, Web Styling, Image Processing, SEO (Computer Systems Institute). Developed course materials, video instructions, extra credit assignments, and end of semester demonstrations.
- Students were non-traditional (foreign, first-generation students), with various experiences with coding; students finished coursework with understanding of a variety of online tools

Instructor, Illinois Institute of Technology 2020

- Developed and instructed ITMD 511 Application and Development Methodologies to Chinese students in Beacon Education School, a satellite school to IIT. Students were based in China and learned various coding patterns. Developed end of course exams and steps to design a functional application prototype students could present part of portfolios.

RESEARCH & GRANTS

- Lead researcher on a mixed-methods dissertation study (n=90) of spatial visualization and technical communication in engineering students; co-developed validated rubrics and individually coded all sketches, reports, and gesture data.
- Authored 11 publications and conference papers in engineering and computing education (ASEE, Engineering Design Graphics Journal, Education Sciences); full list at lynchjohn98.com.
- Developed and submitted an Office of Naval Research white paper (with Dr. Sheryl Sorby) proposing a community of practice for Military and Naval CS students. Not funded; gained direct experience in federal proposal writing.
- Conducted a systematic review of mixed-methods research in computing education and a narrative study of CS student attrition.
- Introduced the collaborative coding tool Parsec to an introductory engineering course and evaluated it with a survey scale built through exploratory factor analysis (Bandura's self-efficacy theory); results showed positive effects on learning.
- Co-developed AI persona simulations of classroom peers for online learning; researched notional machines and unplugged CS activities.

LEADERSHIP & EXECUTIVE EXPERIENCE

President, Graduate Student Association, Dept. of Engineering & Computing Education, University of Cincinnati 2024 – 2026

- Represented the department in bi-monthly university graduate governance, voting on research and travel funding, resource access, and cross-college collaboration.
- Managed the department's group grant budget awards from submission through approval and post-award reporting, funding external speaker visits and events.
- Approved research travel and funding awards for graduate students; built programming with the Colleges of Engineering & Applied Sciences, Education, and Medicine; helped run a seminar exchange with other engineering education programs.

President, ASEE Student Chapter, University of Cincinnati 2024 – 2026

- Led weekly meetings, recruitment, elections, and succession planning; represented the chapter at national ASEE conferences; ran K-12 and undergraduate outreach tables at career and student fairs.

Volunteer Instructor, Stanford Code in Place; Persevere Now 2021

- Led a Python/Karel section for Stanford Code in Place and mentored incarcerated learners in full-stack web development.

HONORS

- Graduate Community Award, University of Cincinnati (2026)
- Fellow, Center for Excellence in Computer Science Education, Northwestern (2021)
- DePaul Admission Partnership Program Scholar (2017–2019)
- CITI Responsible Conduct of Research (2022)
- Phi Theta Kappa Member, Wilbur Wright Community College (2017)