

John William Lynch | MS in Computer Science

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PERSONAL SUMMARY:

Computer scientist with diverse work experience, including tutoring and teaching computer science courses at middle-school, high school, undergraduate and graduate college levels, creating large-scale software development projects independently and through coursework, creating websites based on client specifications under an internship and independently, and creating apps for both Android and Apple. Research experience being the principal investigator of a HCI research group at DePaul University. Extremely driven to form new methods of teaching and learning Computer Science for all people, and passionate to help reduce the exclusivity and barriers present in learning and practicing computer science.

SKILLS:

Thorough understanding of Object Oriented Design Patterns, Object Oriented Languages, Algorithm Design & Implementation, and Data Structure Design & Implementations. Excellent interpersonal skills that allow communication of complex computer science topics in a concise and easily understood form. Ability to think critically and solve problems especially when under time constraints. Extremely knowledgeable in Swift, Python, Java, SQL, C, C#, C++, Scala, PHP, JavaScript/JQuery, HTML/CSS. Very adaptable to new coding languages and experienced with exploring and documenting new languages for the creation of tutorials and introductory work. Experienced with research in CS related issues, including but not limited to the Imposter Phenomena, Human Computer Interaction, usage of online-tools in remote educational environments, collaborative learning, instructor evaluation frameworks, and effective online learning practices.

RESEARCH INTERESTS:

Computing Education, Computer Science Notational Machines, Collaborative Technology, Remote Collaborative Learning, Remote Learning, Imposter Phenomenon, Teacher Evaluation Frameworks, Tools to Measure Teaching Effectiveness. Passionate to reduce the drop-out rate in Computer Science, improving the accessibility of Computer Science education, and creating new or reinforcing effective methods of teaching and learning Computer Science.

RESEARCH EXPERIENCE:

Spatial and Technical Communication Analysis (February 2023-Current)

- Tasked with recording, documentation, and script creation using Python to analyze interview data being collected to explore links between spatial and technical communications

Quasi-experimental design applying remote technology to in-class first-year engineering course (August 2022 - December 2022)

- Led a research project exploring the application of the remote technology ParSec to in-person engineering courses to research improvements to programming abilities of first-year engineering students. Results to be presented at ASEE 2023 Baltimore conference

Principal Investigator for Research Group under Dr. Craig Miller (January 2020 - August 2022)

- Tasked with creation, maintenance, and submission of all IRB materials and ensuring funding and research ethics and outcomes were consistent with all IRB guidelines.
- Our team interviewed students taking a remote introductory programming course about efforts to interact with peers for learning the course content. Result is a framework of guidelines for

analyzing and refining student collaborative learning. Educators can use this to gauge areas in their lesson plans that need to be refined. Possibility of findings to be published in SIGITE 2022.

EDUCATION:

University of Cincinnati : College of Engineering and Computing Education

PhD in Computing Education, August 2022-current

DePaul University : College of Computing and Digital Media

Masters in Computer Science with focus on Software Development, June 2020

DePaul University : College of Computing and Digital Media

Bachelors in Computer Science with focus on Software Development, March 2019

Wilbur Wright Community College

Transferred to DePaul University, September 2017

Notre Dame College Prep

Highschool Diploma, May 2016

TEACHING & WORK EXPERIENCE:

University of Cincinnati : Graduate Teaching Assistance for ENED 1100 & ENED 1120 (August 2022 - current)

- Tasked with overseeing two or more sections of the first-year engineering course ENED 1100/1120 for two semesters. Class sizes average around 50 students. Responsibilities included managing undergraduate teaching assistants grading, lecturing for Python, MatLab, and LabView topics, communicating students needs to multiple instructors, and overseeing professional development opportunities for students led by undergraduate teaching assistants. Worked with head graduate teaching assistant, program manager, and other graduate teaching assistants to facilitate end of course robotic demonstrations.

DePaul University : Adjunct Instructor (September 2021 - March 2022)

- Instructor for CSC300, a Java-based course where students are introduced to fundamental data-structures in Computer Science. Introduces asymptotic notation, focuses on linear data structures and structures that support disjoint-set operations. Ran course in-person format, created assignments, midterm, final, and supported students via asynchronous and synchronous formats.
- Instructor for CSC242, an intermediate course in problem solving, algorithms and programming using Python. Ran class in synchronous online format. Created labs, assignments, quizzes, and final examinations for the course.
- Instructor for CSC281, a course that introduces students to the Java programming language and eclipse development environment. Developed lectures, tutorial videos, assignments, quizzes, and final examinations. Students emerge aptly prepared for CSC300 upon successful completion of this course.

Northwestern University : CECSE : Creator of Introduction to App Development in Swift w/ iPads (September 2021 - December 2021)

- Created a course that used Playgrounds on iPads that introduced adult-learners from various backgrounds who had little exposure to computer science to the Swift programming language. Topics covered included algorithms, logic flow, coding paradigms, problem-solving using computer science, competitive analysis, UX design. Course lasted six weeks and students developed an app to solve a problem they had in their community or personal life. Students presented a showcase of their app that was created with Swift code snippets that had four screens

and used algorithms to solve their selected problem. Introductory course to promote more understanding of CS and STEM related issues and promote CECSE coursework

Northwestern University : Center for Excellence in Computer Science CS Learning & Development Specialist (July 2021 - March 2022)

- Tasked with providing support for Chicagoland educators teaching the fundamentals of Computer Science through the Swift programming language. Consistently available for help with creation and implementation of lectures, labs, quizzes, and assignments. Task to complete work under tight time-constraints and to be available to provide for a diverse group of educators with various schedules and students.

Illinois Institute of Technology : Adjunct Instructor (May 2021 - August 2021)

- Instructor for Application Development Methodologies (ITMD511) asynchronously to Beacon Education in China through IIT. Developed syllabus and assignments for students to learn the analysis, design, implementation, and maintenance of software in C/Java.

Computer Systems Institute : Adjunct Instructor: (September 2020 - August 2022)

- Adjunct Instructor for the Business Digital Multimedia concentration at Computer Systems Institute. Instruct PhotoShop design courses and HTML/CSS courses. Provided with syllabus templates and tasked with timely grading of course work, ensuring students are attending class, designing extra credit opportunities, and monitoring students' standing with the university.

idTech Online Tutor (July 2020 - November 2020):

- Tutor for one-on-one sessions with young adults and children. Taught students various course-work including game design, web design, and algorithm design using Java, Python, and C/C++.

DePaul University Graduate Assistant (September 2019 - June 2020):

- Teacher's Assistant for Introductory Python Courses 241/242 from Fall 2019 to Spring 2020
 - Tasked with leading labs for an hour and a half for introductory courses in Computer Science using Python. Led both in class labs and online labs during the 2019-2020 school year. Worked with 15-20 students per lab session and needed to balance time, expectations, and examples of code to ensure each student understood and succeeded in their lab. Would monitor each student's comprehension and report to the professor how the direction of the course should be taken based on the students' comprehension. Was successful with helping a professor rework his course layout based on these reports.
- Tutor at College of Computing and Digital Media from Fall 2019 to Spring 2020
 - Tutor both undergraduate and graduate students in all course work provided by DePaul's Computer Science curriculum. This included but was not limited to Object Oriented Programming, Distributed Systems, Data Structures, Web Development, WordPress Development, SQL (statistical analysis tools), recursion in Scala/Python/Java, and all introductory Coding Courses. Tutoring sessions were half an hour per student and required a shift in the complexity and speed of explanations based on each student's ability.

Covert Nine Web Developer Internship (May 2019 - September 2019):

- Internship in Client-Side web development using WordPress from Spring 2019 to Fall 2019. Tasked with back-end coding for various client websites (Wells-Lamont, RiotFest) using JavaScript, JQuery, and HTML/CSS. Sat in on client meetings with supervisors and understood

how to transfer client requests towards code. Monitored and maintained previously created websites and was tasked with creating a full test report for Covert Nine's new block system they were deploying that summer.

NorthEastern University Gear UP Assistant(April 2019 - June 2019):

- Assistant Tutor for SENN Highschool in Chicago, IL. Tutored for introductory highschool MIT SCRATCH programs, tutored in mathematics and natural sciences, and aided with college enrichment programs for senior highschool students.

DePaul University College Connect Peer Guide (June 2018 - August 2018):

- Peer Guide for Introductory Website Development Course using WordPress. Tutored Sophomore, Junior, and Senior highschool students in creating personal blogs using WordPress. Also tutored students in introductory PHP coding and introduced variables, basic control loops and for-loop iteration methods.

DePaul University Senior Capstone (June 2018):

- Worked with four other senior computer science students to implement a mock LinkedIn website *Skillmatic* that maps current course work to respective jobs. Used a combination of Ruby on Rails, JQuery, Javascript, HTML/CSS.

FELLOWSHIPS, MEMBERSHIPS & HONORS:

Stanford University: Section lead for CodeInPlace. April 2021 - May 2021

- Volunteer section lead for Stanford's Department of Engineering. Instructed students on advanced programming concepts using Python in association with Karel IDE. Ensured students were up-to-date on each lesson and hosted supplementary office hours for students to explore new avenues and related code in C and Java.

Persevere Now : Code Mentor

- Code mentor for students in Persevere Now, a non-profit focused on the education of incarcerated individuals to train them to become full-stack web developers. Provided one-on-one guidance with incarcerated individuals and led one-hour meetings, where I provided groups of incarcerated individuals examples of programming projects and what they can accomplish with their education.

Northwestern University:

- **Center for Excellence in Computer Science Education Fellow, Feb. 2021 - Dec. 2021**
 - Fellowship given to select Computer Science educators in the Chicago-land area. Tasked with learning the *Swift* coding language before engaging with partnered members to develop and implement a *Swift* course geared towards Chicago-land youth and highschoolers.

DePaul University : College of Computing and Digital Media

- **DePaul University DePaul Admission Partnership Program Scholar**
 - Program provided scholarships and facilitated the transfer process from community college to DePaul.
- **DePaul University Computer Science Society Member**
 - Engaged with various presenters and DePaul peers to speak about Computer Science topics and industry opportunities.

Wilbur Wright Community College

- Inducted into Phi Theta Kappa Society as a Scholar in 2017

- Environmental Club Member that led presentations and organized events to promote environmental issues and solutions.

Notre Dame College Prep

- National Society of High School Scholars Member for 2016