Marouan El Asery

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EXPERIENCE

Biodesign Lab - (PI: Dr. Yu Nong Khew) / *Research Assistant*

Jun 2025 – Present

- Engineered Knitout/JavaScript pipelines to generate knitted tube geometries for growing mycelium-based composites; optimized structural constraints to study how knit architecture influences bio-material growth and mechanical behavior.
- Built automated Python workflows to collect, clean, and visualize material performance data (moisture, density, color/finish), enabling controlled experimentation and reproducible design iteration.

Soft Robots Lab - (PI: Dr. Sonia Roberts) / *Research Assistant*

Jun 2025 – Present

- Developed Knitout/JavaScript code for knitted sensor patterns and a robotic-arm sleeve capable of detecting shear, stretch, and force deformation.
- Built testing workflows and predictive models (scikit-learn) linking stitch structures and materials to sensor responses for medical and human–robot interaction applications.

Dr. Yuxuan Mei Lab - Wesleyan University / *Research Assistant*

Sept 2025 - Present

- Developed knitted thermal wearables (neck pillow, mitten, cup sleeve) with conductive yarns; generated Shima Seiki patterns and standardized metadata for all prototypes.
- Built Arduino-based circuits and data-logging tools to tune temperature behavior and identify optimal stitch patterns and yarn configurations.

Computer Science & Mathematics Dept / *Teaching Assistant*

Sept 2025 – Present

- Led help sessions for Data Structures & Algorithms; clarified structured problem-solving and communicated complex design processes with strong verbal clarity.
- Coached debugging and iterative ideation-to-solution workflows, improving code clarity and testability.

Information Technology Services / *Instructional Media Specialist*

Sept 2022 – May 2024

- Advised 50+ faculty on visual communication and narrative-driven presentation design (Adobe Suite & Keynote); increased classroom engagement ~35% through targeted tools and analytics.
- Deployed learning tools across 40+ classrooms; built interaction dashboards and strengthened documentation, reinforcing collaborative workflows and design consistency.

EDUCATION

Dartmouth College – Hanover, NH
Visiting Undergraduate Student
Winter & Spring 2026

Wesleyan University – Middletown, CT
BA in Computer Science with Physics
Expected May 2026

University of Edinburgh – Scotland
Study Abroad - Fall 2024

HONORS & AWARDS

Yale Young African Scholars (YYAS)

Research in Science Fellowship

Wesleyan Math and Science Scholars

IRA National Championship (2024)

EXTRACURRICULARS

Division III Men's Rowing Team

SKILLS

Programming
Python, Java, C/C++, C#, JavaScript/TypeScript, SQL, R, PHP, MIPS, SML

Data/ML:
scikit-learn, Pandas, NumPy, feature engineering, model selection, predictive modeling, statistical methods, data cleaning/ETL, Tableau, Power BI, Excel (advanced)

Software Engineering
REST APIs, Node.js, React, .NET (C#), Flask; Git, testing practices, CI basics

Cloud/Infra
Microsoft Azure, Google BigQuery, Apache/XAMPP; logging/metrics

Visualization & Accessibility
Adobe Illustrator, Photoshop, InDesign, dashboards, descriptive analytics, accessible documentation & UIs, reporting