Yuyang Wang

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Education

Northwestern University, Evanston, IL **Bachelor of Arts, June 2026**
Majors: Computer Science ***GPA: 3.98/4.00***
Honors: Dean's List (Fall 2024, Winter2025, Spring 2025)

Colby College, Waterville, ME **September 2022 – May 2024**

Honors: Bixler Schoolar Award (GPA top 1%), Dean's List (Fall 2022, Spring 2023, Fall 2023)

Research Interests

Human–Computer Interaction; Accessibility; Human–AI Interaction; XR/VR Interaction; Visualization.

Research Experience

Accessible LLM Interaction for Blind & Screen-Reader Users Jun. 2025 – Present
Supervised by Prof. Darren Gergle, CollabLab, Northwestern University

- Built an accessible research platform to study and improve LLM interaction for blind and low vision users, using Next.js/TypeScript, Node.js, MongoDB, Auth0, Tailwind, and OpenAI Edge streaming.
- Designed a **screen-reader-first UX** with **ARIA live regions** and **deterministic focus** across streaming/dialogs; ensured **keyboard-only workflows** to keep announcements and navigation stable during streaming and dialogs.
- Implemented per-sentence annotation by segmenting replies, rendering sentences as focusable controls, and capturing quality/bias judgments, improvement suggestions, and consent; **stored records in MongoDB**.
- Standardized data collection by capturing **pre-chat intents**, **timestamped transcripts**, **automatically prompted feedback**, **and sentence annotations**, producing **analysis-ready datasets** for mixed-methods evaluation.
- Enforced privacy: Auth0 auth, SSR ownership checks, per-request session validation, explicit consent flags.

Virtual Offshore Wind Turbines May 2024 – Aug. 2024
Supervised by Prof. Stacy Doore, Insite Lab, Colby College

- Built a **Unity-based VR environment** with true-scale offshore wind arrays **above and below** the waterline to help fishing stakeholders **evaluate impacts on gear, access, and operations** and communicate findings to policymakers.
- Integrated **underwater environments with kelp and coral**, spatialized ambient and turbine audio, realistic water simulation, and locomotion via a guided boat tour and free teleportation to give stakeholders an engaging experience.
- Designed an in-VR **control panel** using XR Interaction Toolkit and **XR Simple Interactable** to toggle different **mooring configurations**, select **fishing gears,** switch **teleport locations**, and explore different **sea-state** scenarios.
- Delivered hands-on demos to commercial fishers and community representatives with a scripted flow from orientation to comparative scenarios to free exploration; collected feedback and incorporated it into subsequent builds.
- Migrated the project to the latest Unity version and resolved deprecations, improving compatibility and performance.

Conferences

- **Colby Undergraduate Student Summer Research Symposium (Waterville, ME), July 2024:**
Y. Wang, A. Li, S. A. Doore, Virtual Offshore Wind Turbines. [Oral presentation].

Other Experience

Integral Pivots Nov. 2024 – Present
Software Development Intern

- Developed behavioral interview platform using MERN stack integrated with AWS to help interview preparation.
- Engineered AI-powered chat using WebSockets and OpenAI API with thread storage in MongoDB and AWS S3.
- Built document management system with Next.js featuring Markdown editor and hierarchical folder organization.
- Implemented authentication using Cognito JWT tokens and OAuth 2.0 with Google/GitHub providers integration.

- Integrated Stripe payment processing for subscription management with role access control (RBAC) system.

CodeDay Labs Jun. 2024 – Aug. 2024

Open-source Contributor

- Resolved axis sharing issues in sharex/sharey/clear methods contributing to Matplotlib open-source codebase.
- Diagnosed shared-axes plot bugs and **documented behavior**, improving subplot consistency for the library
- Reviewed code fixes with teammates ensuring pre-merge checks and maintaining code quality standards.
- Enhanced visualization accuracy through shared axes reset fixes benefiting thousands of Matplotlib library users.

Colby College Sep. 2023 – Dec. 2023

Computer Science Teaching Assistant

- Facilitated weekly sessions, supported students through academic challenges, collaborated with the professor on curriculum enhancements, and contributed to course improvement efforts.

Projects

Netify GitHub | Website

Music Playlist Migration Platform

- Built playlist migration app using Next.js (TypeScript) and FastAPI, deployed on Vercel and Fly.io infrastructure.
- Implemented Spotify OAuth 2.0 PKCE flow, handling callback and token exchange with React Context storage.
- Integrated Spotify Web API creating playlists, adding tracks with retry/backoff logic, uploading custom cover art.
- Consumed NetEase APIs with pagination, working around 804-track cap to import 10k+ tracks successfully for users.
- Built RapidFuzz matcher with artist normalization and <10s duration tolerance, reducing mismatches by 50%.
- Designed resilient UX with progress tracking, timeout recovery prompts, supporting 50+ users migrating 10k+ songs.

Light Portfolio

RPG Game Prototype

- Led a team of 5 designers and developers in Agile sprints to create “Light,” a role-playing game prototype.
- Engineered AI-driven enemy behaviors including patrolling, random movement, and player chasing in Unreal Engine.
- Designed interactive puzzle sections with laser emitters, mirrors, and sensors, boosting user engagement by 50%.
- Composed original soundtracks using GarageBand enhancing combat intensity and overall game experience.

Skills

Programming Languages: Python, TypeScript/JavaScript, Java, SQL, C/C++, HTML/CSS

Frameworks: Next.js, React, Node.js/Express, Spring Boot, FastAPI, Django, PyTorch

Databases: MongoDB, PostgreSQL, MySQL, Redis, Convex DB

Cloud & DevOps: AWS, Docker, Kubernetes, Vercel, Fly.io, CI/CD, GitHub Actions

Technical Skills: Git/GitHub/GitLab, REST API, OAuth 2.0, JWT, Redux, WebSockets, Microservices

Relevant Coursework

Computer Science coursework: Human Computer Interaction, Software Design Principles and, Practices, PC Game Design, Programming Languages, Design &Analysis of Algorithms, Quantum Computing, Introduction to AI, Machine Learning, Fundamentals of Computer Programing, Comp System Software,