Yanmei Wang

Phone: (US+1) (734) 548-7207 | E-mail: wyanmei@umich.edu | Portfolio | Github: Yanmeeei | LinkedIn: Yanmei

EDUCATION

University of Michigan, Ann Arbor, United States 04/2025
M.S. in Computer Science & Engineering, GPA: 3.9/4.0
B.S.E. in Computer Science, GPA: 3.8/4.0

Shanghai Jiao Tong University, Shanghai, China 08/2023
B.S.E. in Electrical and Computer Engineering, GPA: 3.6/4.0

SKILLS

Languages: Python, C++,C#, HTML/CSS, Javascript, GoLang
Framework: React.js, Tailwind CSS, SQLite, OpenAI API
Technical skills: Agile Development, Data Structures, Testing, CI/CD, Relational databases, Web Design & System, Operating System, Software Development Cycle, Machine Learning
Tools: Git, AWS, Jira, Confluence, XCode, VS Code, JetBrains IDEs, Unity

WORK EXPERIENCE

Software Engineer Intern @ PreVeil, Inc. Boston, MA | 06/2024 - 08/2024
- Developed a middleware for file system integration using **Swift** and **GoLang**, enabling real-time management and synchronization of drive files across devices; laid the groundwork for integration into end-user environments and future product deployment. Adapted **Agile methodology**.
- Implemented and deployed **22 RESTful API** endpoints using the **Swift Alamofire** library to send and receive **HTTP** requests, ensuring efficient interactions with remote drives.
- Developed and deployed over **30 unit tests** for the backend functions using **XCTest**; conducted API testing using **Postman** to ensure code integrity.
- Iterated and improved **UI/UX** of PreVeil Desktop/Web App using **TypeScript, Javascript,** and **HTML/CSS**, improving performance and user experience, and contributing to a more intuitive interface for thousands of users.

Software Developer Intern @ Arborsense, Inc. Ann Arbor, MI | 09/2022 - 02/2024
- Engineered a prototype using **Python Numpy**, **Pandas**, and **Scipy** libraries that powers the company's core product.
- Owned the **end-to-end development** of the data analysis pipeline, ensuring accuracy and scalability in processing biological and environmental datasets, and identifying **over 72 types of data patterns**.
- Engineered an optimized data processing algorithm that improved computing overhead by ~1.6x.
- Accelerated the iteration cycle of algorithms **from 1 week to 3 days** by visualizing the duration of detected events using **Matplotlib**, enabling the engineering team to identify event periods on a timeline.
- Directed the **code version control** and **documentation** between the engineering and cloud dev teams, resulting in a well-organized changelog over 78 iterations, ensuring transparency and easy tracking of updates.

PROJECT EXPERIENCE

AI-Based E-Commerce Analysis & Recommendation CLI [Repo] 01/2025
- Developed a recommendation CLI using **Python** (**SKLearn, Pandas, Numpy, etc.**) that generates synthetic data, analyzes data, performs clustering, and provides AI-based recommendations based on customer's purchase history.
- Performed **K-Means clustering** using RFM features, and evaluated the clustering results using Silhouette Score.
- Generated reports using **Matplotlib** and interactive 3D clustering visualization using **Plotly**.
- Leveraged **SentenceTransformer** pre-trained models to perform similarity calculations for content-based filtering recommendations.

APOD Daily Feed [Link] 11/2024
- Developed a web app using **React.js** that displays NASA's Astronomy Picture of the Day (APOD) feeds**.**

LLM (GPT-4o) Powered Tutoring Web App [Demo Video] 10/2024 - 11/2024
- Developed a **Django-based** AI tutoring system (focused on the MCQ section) using **Python** and **OpenAI API**, supporting students' learning experiences on the Toulmin writing model.
- Managed pre-defined articles, user progresses, and run-time generated questions using **SQLite.**
- Performed **prompt engineering** on GPT-4o instances to fetch customized feedback based on students' responses.

Instagram Clone Web App 10/2022 – 11/2022
- Built an Instagram-like social media website and deployed it to an **AWS EC2** instance.
- Developed & improved the website layout using **HTML/CSS**.
- Implemented back-end services to update user interactions in real-time using **Python Flask**, and integrated with **SQLite** database for CRUD operations on the user, following, and commenting tables.
- Developed **client-side dynamic pages** with infinite scrolling & updates without refreshing using **React.js**.

- Engineered a diagnostic API endpoint for PreVeil Drive using **GoLang**, optimizing data pagination from the server backend, which reduced data flow overhead and improved response time by ~1.5x. Improved the corresponding diagnostic frontend webpage using **HTML** and **Javascript** to adapt to pagination.

GAME DEV PROJECTS

Web-First, Accessible Game Engine Development [Spec | Git Repo] Ann Arbor, MI | 01/2024 – Present
(Research directed by Professor Austin Yarger @ UMich)

- Developing a web-based game engine for **RTS** + **tower defense** games.
- Implemented the in-game toast message system using **C# Godot** and **Eventbus library**.
- Created the generalizable tower and resource functionalities using **Godot** (**C#**), ensuring tower object animation and material adaptation.
- Adapting **AWS** servers to dynamically load resources into the game at runtime.

Soul of the Forest (**Wolverine Soft Studio**) [Steam Page] Ann Arbor, MI | 09/2023 – 04/2024

- Developed a dialogue-driven **Unity** game inspired by *Undertale*.
- Designed and Implemented multiple **cutscenes** using Unity built-in tools such as playable director.
- Programmed various **in-game interactions** between the player character and the environment.
- Created six level maps and applied layers of tilesets using **LDTK**; worked closely with the Art and TechAudio team.
- Utilized **Jira** for project management, and **Git** for code version control and cooperation.

BIO 452: Field Ecology of Snail-Fungus Interaction [Portfolio] 03/2023 – 05/2023

- Engineered core mechanisms in **Unity** (**C#**): special ground blocks, the navigation and auto-attack features of little snail & mushroom RTS units, etc. The game was **ranked 6/30** on the UMich game showcase by player voting.
- **Led** the **design** of the player experience and art, creating in-game art assets, and achieving appealing visual effects.

WORK EXPERIENCE

Software Engineer Intern @ PreVeil, Inc. Boston, MA | 06/2024 - 08/2024

- Integrated the PreVeil Drive backend with the **FileProvider framework** on macOS using **GoLang** and **Swift**, successfully mounted the online PreVeil Drive to macOS devices' file system, keeping files updated on all devices.
- Implemented and deployed 22 **RESTful API** endpoints using the **Swift Alamofire** library sending **HTTP** requests, enabling mounting, browsing, and CRUD operations to remote drive directly via macOS Finder.
- Developed and deployed over 30 **unit tests** for the JSON decoder and the backend API endpoints using **XCTest**. Additionally, conducted API testing with **Postman**, ensuring code integrity.
- Iterated and improved **UI/UX** of PreVeil Desktop/Web App using **TypeScript, Javascript,** and **HTML/CSS**, improving performance and user experience.
- Engineered a diagnostic API endpoint for PreVeil Drive using **GoLang**, optimizing data pagination from the server backend, which reduced data flow overhead and improved response time by ~1.5x. Improved the corresponding diagnostic frontend webpage using **HTML and Javascript** to adapt to pagination.

Software Developer @ Arborsense, Inc. Ann Arbor, MI | 09/2022 - 02/2024

- Implemented multiple data processing techniques using **Numpy**, **Pandas**, and **Scipy** (baseline correction, FFT filtering, etc.) to analyze biological & environmental data with **SQLite**, identifying over 72 types of patient events using **Python**.
- Generated chart reports using **Matplotlib**, enabling the engineering team to visually identify event periods on a timeline, significantly accelerating the development and iteration of algorithms.
- Directed the **code version control** and **documentation** within the engineering team, resulting in a well-organized changelog over 78 iterations to ensure transparency and easy tracking of updates.

RESEARCH EXPERIENCE

Research Assistant @ Clarity Lab (UMich CSE Department) Ann Arbor, MI | 05/2022 – 10/2023

- Designed and implemented the key scheduling algorithm (greedy algorithm) using **Python**. Enables multiple swarm devices to collaborate, achieving up to 3 times speed up for large object detection models under memory constraints. Libraries used: **Numpy, Pytorch, Scipy**, etc.
- Implemented a simulation-based experimental infrastructure that conducts performance and energy evaluation of the proposed technique/system using **Python**.
- **Profiled** several neuron network models using **Tegrastats** on low-end edge devices such as NVIDIA Jetson.

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- **Optimized** data processing algorithm using sliding windows, accelerating computing overhead **by ~1.6x**.
- Generated chart reports that mark the duration of detected events using **Matplotlib**, enabling the engineering team to visually identify event periods on a timeline, accelerating the iteration cycle of algorithms **from 1 week to 3 days**.
- Directed the **code version control** and **documentation** between the engineering team and cloud dev team, resulting in a well-organized changelog over 78 iterations, ensuring transparency and easy tracking of updates.

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- Developed a web app that displays NASA's Astronomy Picture of the Day (APOD) feeds using **React.js.**
- Deployed the web app on Netlify.

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