

# YASHWANTH RANJAN SINGARAVEL

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## EDUCATION

### University of Wisconsin – Madison

Bachelor of Science in Computer Science and Data Science

Dean's List (Fall 2022, Fall 2023, Spring 2023)

Madison, WI

May 2026

GPA: 3.74

**Relevant Coursework:** Software Engineering, Advanced Computer Systems, Data Structures and Algorithms, Advanced programming in Java, Advanced Data Analysis in Python (Pandas, NumPy, SQLite), Computing Hardware, Artificial Intelligence, Computer Graphics.

## PREVIOUS EXPERIENCE

### Internet Scout Research Group – Web Developer

May 2024 – Present

Madison, Wisconsin

- Edited **500+ lines** of code in **30+** files to resolve errors detected using **static analysis** tools to improve code safety and readability.
- Addressed numerous bugs in the production site through patches using bug tracking systems, optimizing reliability and performance.
- Documented and tested in-house plugins by using **selenium** and **python** to find and resolve potential issues to ensure site stability.

### Software Training for Students | Division of IT – Student Trainer

May 2024 – Present

Madison, Wisconsin

- Facilitated teaching software development concepts by conducting over **six workshops**, providing a learning platform for students.
- Mentored more than **fifteen students** with technical queries in 1 - 1 meetings to help them gain clarity on complex technical topics.
- Aided in the creation of **guides** for topics from coding paradigms to using specialized software, facilitating asynchronous instruction.

### Yorosis Technologies – Web Development Intern

December – January 2024

Chennai, India

- Collaborated with professionals on **API** development using **Spring Boot** to help develop the backend for an automation platform.
- Reduced database lookups by implementing annotation-based **caching**, boosting system performance by a **27%** reduction in latency.
- Enhanced data protection measures by utilizing **Spring Security** and **OAuth2**, establishing secure pathways to access sensitive data.

### EZEE Tech – Web Development Intern

May – August 2023

Dubai, UAE

- Worked on the user interface for an ecommerce webapp using WordPress, **PHP**, and **CSS**, providing a seamless and intuitive **UX**.
- Integrated **SEO** practices on the website by applying tools like **Google Search Console** and **Yoast SEO**, enhancing search visibility.
- Generated **data-driven** insights to further optimize site by employing **A/B testing**, augmenting end-user retention and engagement.

## PROJECTS

### Chat Application

July – September 2024

- Designed an instant messaging app using Angular, Node.js, Express.js, and MongoDB, enabling engaging real-time user interaction.
- Implemented user authentication by leveraging **JSON Web Tokens (JWTs)**, allowing for persistent and secure session management.
- Integrated an intelligent search feature utilizing the **LangChain** framework to vectorize and query chat logs using natural language.

### Library Manager

June – August 2024

- Developed a Library Management System using a **JavaFX** client application, featuring two distinct modules for Admins and Users.
- Constructed a REST API through **ExpressJS** and **PostgreSQL**, interfacing the client application with the back-end infrastructure.
- Implemented persistent session stores through JWTs and **OAuth2** protocols, ensuring reliability and ease of access to sensitive data.

### Ray Trace Renderer

March – May 2024

- Built a web interface for a Ray Tracing Engine by applying the **JavaScript** API from scratch, enabling semi-realistic image rendering.
- Simulated light rays by algorithmically keeping track of objects to apply accurate light diffusion and reflection in 3 dimensional space.
- Engineered a viewport mode by minimizing samples and simplifying the raytracing algorithm, reducing preview time by **250 percent**.

### Point Tracker

January – March 2024

- Created a windows app to follow a point in a video using **Java**, enabling the tracking of a high-contrast point's position and velocity.
- Minimized the area scanned every frame by predicting the point's position in future frames, lowering the analysis time by **over 36%**.
- Provided a GUI using **JavaFX** and **CSS**, assuring an intuitive interface with facilities to import, analyse, and export video sequences.

## SKILLS

Languages: **Java, Python, JavaScript, TypeScript, PHP, HTML, CSS, C, C++, R, Assembly (x86), Bash Script**

Frameworks: **Angular, React, React Native, ExpressJS, JavaFX, Spring Boot, Flask, Pandas, TensorFlow**

Databases: **PostgreSQL, MySQL, MongoDB, Redis, SQLite**

Tools: **Linux, Bash, Git, Docker, Maven, npm, pip, Jenkins, Vim, Jira, Azure Board, Postman, PHPStan, Latex**