Shaokang Jiang

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Education

University of California San Diego — La Jolla, CA
M.S. in Computer Science and Engineering, Advised by Michael Coblenz — *2022-2024 (expected)*

University of Wisconsin-Madison — Madison, WI
B.S. in Computer Science, GPA: 4.00/4.00, graduated with distinction in the major — *Graduated 2021*

Experience

Software Engineer — June 2024 – now
Pullscription

- Worked closely with Jago, the founder and CEO, to discuss, suggest, design, and implement the system structure for the organization's blog and shopping website, including both the customer and supplier end. The aim was to create an easy-to-maintain structure that is fast for users to access and optimized for SEO.
- Utilized Nginx and Docker to deploy the system on a server with CI/CD pipeline spported by GitHub Actions.
- Deployed and integrated the Matomo tracking system with a focus on privacy concerns and wrote unit tests.
- Collaborated closely with the team and provided guidance in implementing the website.
- Integrated Stripe for payment processing and Auth0 with JWT for authentication into the website, and wrote tests.
- Worked with the design team to create and implement a blog site using Nuxt with TypeScript and a shopping site for publishing and managing comic books, embedding abstract content of weekly news into the main website.

Graduate Student Researcher — January 2023 – now
University of California San Diego

- Worked with professors and researchers on projects. Published paper at FSE 2024. Submitted to CSCW 2026.
- Developed an universal user interaction tracking platform for VSCode, integrating Tobii Eye Tracker 5 to capture eye movement and user interactions across in-editor events, with a JavaScript frontend and C# backend; reduced frontend-backend communication latency to one-tenth of the existing solution, tested over 80 hours with 33 users.
- Developed a high-accuracy algorithm in JavaScript and Python (using Hugging Face) to detect whether a video is a clip of another, outperforming existing solutions, and implemented a concurrent pool management tool to fully utilize a multicore cloud server.
- Worked on and deployed an online meeting platform left by a previous team, adding separate interfaces for facilitators and participants, Firebase for real-time communication, Daily.js for meetings, Assembly AI for transcription and data analysis, and GPT-based cues, resolving critical bugs and enabling 86 meetings.

Teaching Assistant — January 2023 – now
University of California San Diego

- Served as the sole or lead TA for several courses, including Java and Data Structures, Usability of Programming Languages, and Compilers. Received 'Excellent' ratings from instructors and a 90%+ student recommendation rate.
- Developed several assignment and unit tests using JUnit on Docker, created templates with GitHub Actions, and helped students with the code merge process.
- Developed an interactive shell with session management using JSP and Servlets deployed on Azure, allowing students to try solutions online without exposing the source code. Successfully supported 30+ users simultaneously.

Technical Skills

- **Languages**: Java, Python, Rust, C, C++, C#, HTML/CSS/JavaScript, TypeScript, Matlab, LaTeX, GAMS, Markdown, Haskell, SQL, Embedded JavaScript, Blogger Template Language, Shell
- **Frameworks**: React, Nuxt, Node.js, Vue, Jest, Vitest, JavaServer Pages, Flask, Expo (React Native), JUnit, Svelte, VitePress, Hexo, Electron, Chrome Extensions, VSCode Extensions, Puppeteer, Tampermonkey, JavaFX, Servlets
- **Platforms/Tools**: Git, Docker, GitHub, Google Cloud, Azure, Cloudflare (Workers and KV), Firebase, Oracle Cloud, VS Code, Visual Studio, IntelliJ, Eclipse, Nginx
- **Libraries/Services**: Auth0, Stripe, Matomo, MailJet, Daily.js, Socket.io, TensorFlow, WebGL, NLP.js, echarts, Matplotlib, echarts, PyQt, Pyramid, CherryPy, Three.js, and much more
- **Other Platforms**: Windows, Linux, JIRA, Trello, DevOps, Agile, JMP, Figma, Photoshop, Qualcoder, Taguette, Premiere, Audition, Blender, Excel, Word, PowerPoint

Projects

Highlighted below are selected projects. For a comprehensive portfolio, visit shaokang.me/projects.

Online interactive shell | *Java Server Page, Servlets, Java, Azure* 2023

- Developed an interactive shell using JSP and Servlets deployed on Azure, enabling students to run Java source code online without accessing the source code, while supporting over 30 users simultaneously. The backend featured a custom connection session management utility to optimize resource usage and ensure seamless session handling.

Financial Tutoring website and app | *HTML, Ejs, Worker, JavaScript, echarts, Expo, NLP* 2020

- Designed and led a team to develop a static financial education website for Capital One. The site includes interactive learning tools, such as quizzes and a self-built, stateless learning progress tracking system. It also has various utilities, including a personal expense management app.
- Created detailed implementation guidance for group members and a user manual for the website and learning content. Build CI/CD pipelines and deployed them with GitHub Actions.
- Built front end using embedded JavaScript for the main site and HTML with JavaScript for utility tools. Developed backend with JavaScript and deployed on Cloudflare Workers to handle requests, including the encryption and decryption of learning stage information using AES and crypto and a dynamically rendered quiz system. Users can download their encrypted learning progress and upload it to decode and resume learning, or use the same browser to continue learning. No data is stored on the server considering privacy and budget.
- Developed a cross-platform personal finance app for Capital One that enables users to manage expenses and income via voice and chat interfaces using a local NLU engine, built with Expo for Android and iOS, tested and packaged for both platforms; Designed with JSON import/export for secure, local-only data storage and syncing.
- Followed Agile methodologies, discussed with mentors and communicated with stakeholders to understand their needs and software development stages.

Energy Simulator | *HTML, WebGL, JS, Java, JavaFX, Three.js, echarts* 2020

- Designed and developed a web-based energy simulation tool utilizing jsLPSolver to optimize energy sources based on historical data and project future trends via linear regression.
- Presented results on a static website built with HTML and JavaScript, featuring a 3D energy system simulation using A-Frame and Three.js, with AR functionalities via QR codes, dynamic data visualization, and lightweight localization. Ensured full support for modern browsers and partial support for IE 11.
- Reimplemented most functionalities in JavaFX without 3D representation.

AutoCommenter | *Java, JFrame* 2019

- Designed and developed a local utility program in Java with JFrame to analyze Java code on preset rules and semi-automatically add comments by integrating user input through typing or voice, with voice recognition powered by the iFlyTek API and translation supported by the Baidu Translation API.

HateFate Website | *HTML, Java Server Page, SQL, Java, Servlets* 2017

- Led a four-person team in developing a social networking website that connects users based on shared dislikes, with features including login, email-verified signup, and user pairing. Utilized Material design to create the interface.
- Developed the frontend using HTML and JavaServer Pages (JSP) and built the backend with JSP and SQL for data storage. Deployed on the Azure cloud with an Azure SQL database.
- Developed multiple login methods and utilized cookies to store user information, enabling automatic session recovery. Designed and integrated a custom mail system to handle email verification, password resets, and new match notifications using SMTP.
- Secured the website with SSL encryption and employed a combination of MD5, public/private key encryption, and AES for data security during page forwarding and email verification.

Publications

- Shaokang Jiang and Michael Coblenz. **An Analysis of the Costs and Benefits of Autocomplete in IDEs**. Proceedings of the ACM on Software Engineering (FSE 2024) (25% acceptance rate)
- Jude Rayan, Shaokang Jiang, Nishant Balaji, Jinmao Wang, Ian Gross, Cole Biehle, Steven P. Dow. **LLM-Driven Conversational Cues Across Different Meeting Modalities Increase Topical Diversity of Generated Ideas**. Under review. Proceedings of the ACM on Human-Computer Interaction (PACM HCI) (CSCW 2025)

Awards and Activities

- Student volunteer at FSE 2024 July 2024
- Graduated from UW-Madison with distinction in the Major Spring 2021
- Dean's List of College of Letters & Science at UW-Madison for each quarter