

# Jay Madupalli

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## Skills

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**Languages:** TypeScript, JavaScript, Java, Python, PHP

**Frontend:** Next.js, React, Angular, Redux, React Query, GraphQL, Zustand, Tailwind, CSS

**Backend:** Node.js, NestJS, Spring Boot, SocketIO, WebRTC, TypeORM, Spring JPA, Spring Security, JUnit, Flask

**Other:** AWS, NPM, Vite, Maven, SQL, Git, Docker, CI/CD, Turborepo, Bash, Nginx, Caddy, Tomcat

## Experience

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**Software Developer - 3**, University of Minnesota – Minneapolis, MN May 2024 – Present

- Designed and developed a multi-tenant clinical study platform using NestJS, Next.js, React, and Payload CMS
- Implemented a monorepo architecture with Turborepo and pnpm, improving efficiency and maintainability
- Built granular role-based access control, file sharing, drug management, randomization applications, and other clinical study-specific functionalities, integrating PostgreSQL, Oracle, and RedCap
- Optimized deployment with Docker, automatic SSL provisioning, and scalable API integrations via GraphQL, REST

**Graduate Research and Teaching Assistant**, Missouri State University – Springfield, MO Aug 2022 – Dec 2023

- Devised decentralized crowdsensing framework for user privacy, integrated behavioral economics for retention
- Developed Solidity smart contracts and conducted simulations using TypeScript for performance refinement
- Published conference research paper and taught, graded, and provided feedback to 150+ students over 1.5 years

**Full Stack Developer**, Myron Royce Gardens – Ozark, MO Jun 2023 – Aug 2023

- Developed a customer management portal, replacing 40+ disparate Excel sheets, and centralizing customer data
- Built the portal using Node.js, React, and PostgreSQL, ensuring seamless deployment and user-friendly features
- Reduced customer support overhead by 30% through the transition, streamlining 25+ services for 800+ clients

**Software Developer**, ResNet, Missouri State University – Springfield, MO May 2022 – Aug 2022

- Automated device registration for 400+ machines in 9 residence halls using Python for inventory efficiency
- Developed REST APIs (Flask), refactored DB schema for dynamic device data improving equipment tracking

**Software Engineer**, Axiom IO – Hyderabad, India Feb 2020 – Oct 2021

- Led a team in developing a telemedicine app with Node.js and Angular to facilitate remote healthcare access
- Integrated video conferencing and chat features using WebRTC and WebSockets for real-time communication
- Architected HIPAA-compliant, scalable multi-tenant system on AWS using EC2, RDS, S3, Route53, and SES
- Established error-handling mechanisms in AWS Lambdas (Flask) for data reliability in a data warehousing app

**Founder**, Skillerz – Remote | [\[Archive Links\]](#) Dec 2015 – Sept 2021

- Developed ad network accumulating \$100k+ revenue and 42,000+ users over 5 years with PHP, MySQL, Nginx
- Refactored features and implemented load balancing strategies for scalability, handling millions of impressions
- Automated payments and site management by integrating external APIs, scheduled cron jobs, and shell scripts
- Established web ecosystem including ad network, traffic exchange app, internet forum, and web hosting service

## Projects

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**redy** | [\[Digital Presence Platform\]](#) | Spring Boot, Next.js, React, PostgreSQL, Tailwind, Docker redy.page

- Developed platform for automating personal website and blog creation using Spring Boot, Next.js, and Caddy
- Integrated Apache Tika and OpenAI for automated content extraction, analysis, generation based on resume data
- Architected rendering engine for custom templates and configured Caddy for custom domains and subdomains

## Education

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**Master of Science in Computer Science** – Missouri State University Dec 2023

**Graduate Certificate in Data Science** – Missouri State University Dec 2023

**Bachelor of Technology in Computer Science** – Jawaharlal Nehru Technological University, Kakinada May 2019