# Hassan Khalid

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## EDUCATION

**University of Wisconsin–Milwaukee** — Milwaukee, WI
*Bachelor of Science in Computer Science* — *Dec 2024*

## SKILLS

**Languages:** Python, Java, JavaScript/TypeScript, Node.js, C, HTML/CSS
**Frameworks & Libraries:** Spring Boot, React, Next.js, Django, SvelteKit, Tailwind CSS
**Cloud & DevOps:** AWS (EC2, RDS, S3, Lambda, API Gateway, DynamoDB, Cognito, CloudWatch, CloudFront, IAM), Docker
**Developer Tools:** PostgreSQL, MySQL, Git, Linux/Unix, Supabase, JUnit

## EXPERIENCE

**Software Engineering Fellow** — 2024
*CodePath - Partnership with Microsoft, Amazon* — *Remote*

- Solved **50+** algorithm challenges in trees, graphs, and dynamic programming achieving **85%** success rate by applying systematic problem-solving patterns with **Python**
- Mastered **8** interview patterns including sliding window, binary search reducing solve time by **60%** through pattern recognition
- Completed **10+** mock interviews improving communication score from **6/10** to **9/10** with industry mentors

**Software Developer** — Present
*Current Independent Project* — *Milwaukee, WI*

- Developing **RAG** chatbot with **LangChain** and **OpenAI API** processing **50+** documents using **ChromaDB** vector database for semantic search reducing hallucinations by **80%** through document embeddings and re-ranking algorithms
- Engineering full-stack application with **React** and **FastAPI** enabling real-time streaming responses with conversation memory and dynamic document upload

## PROJECTS

**Ora - Cloud Storage Manager** | *React, Spring Boot, PostgreSQL, AWS*
GitHub | Demo Video

- Developed full-stack cloud storage application handling **200+** file uploads with **Spring Boot RESTful API** storing metadata in **AWS RDS PostgreSQL** and files in **S3** using **pre-signed URLs**
- Secured with **AWS Cognito JWT** authentication and **Spring Security** filters preventing unauthorized access to **100%** of protected endpoints
- Deployed on **AWS EC2** with **Nginx** reverse proxy eliminating hardcoded credentials through **IAM** roles and **Parameter Store**

**Serverless URL Shortener** | *Next.js, TypeScript, AWS Lambda, API Gateway, DynamoDB, CloudFront*

- Built URL shortening service with **AWS Lambda** and **Node.js** processing **500+** redirects through **API Gateway REST API** stored in **DynamoDB** reducing infrastructure costs by **99%** through pay-per-request serverless architecture versus traditional **EC2**
- Deployed with **CloudFront CDN** and **CloudWatch** monitoring detecting **100%** of function errors in real-time through custom dashboards

**Collaborative Study Platform** | *JavaScript, Svelte/SvelteKit, Tailwind CSS, Docker, Supabase*
GitHub | Demo Video

- Built full-stack learning app with **5-person** team in **Agile/Scrum** framework supporting **100+** users and implementing real-time synchronization and authentication with **Supabase**
- Reduced setup time by **75%** through standardized **Docker** configuration enabling consistent environments across the team