Jae Young Seo

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Software engineer with hands-on experience in full-stack development, generative AI, and systems-level research. Led concurrency abstraction research in Go and built applications using React, FastAPI, and PostgreSQL. Thrive in fast-paced environments through strong communication, leadership, and cross-functional collaboration to ship impactful solutions end to end.

SKILLS

- **Programming Languages:** Java, Python, Go, TypeScript, JavaScript, C, OCaml, SQL
- **Frameworks & Libraries:** React, FastAPI, Django, Node.js, Flask
- **Databases:** PostgreSQL, MongoDB, MySQL
- **Tools & DevOps:** Google Cloud Platform (GCP), Docker, Git, RESTful AP

WORK EXPERIENCE

Cognizant Remote
Generative AI Externship 05/2025 – 06/2025

- Developed and deployed two generative AI applications using pretrained transformer models (GANs, GPT), applying prompt optimization and fine-tuning techniques to improve model accuracy and output relevance.
- Delivered high-quality project work under mentorship, incorporating iterative feedback, technical guidance, and structured lessons to refine outcomes.

Research Assistant (Go) Poughkeepsie, NY
Marc Smith | Chair of the Computer Science Department 08/2024 – 05/2025

- Designed and implemented **ParV2**, a concurrency abstraction in Go that leverages reflection to run arbitrary functions in parallel with runtime safety.
- Delivered a **PAR composition operator** inspired by CSP/Occam, laying groundwork for more expressive and less error-prone concurrent programming in Go
- Built a concurrent sorting pipeline and a replicator utility to demonstrate practical applications of ParV2 in real-world scenarios.
- Contributed to research advancing higher-level abstractions for goroutine composition, with ongoing work under preparation for publication.

PROJECTS

FitTrack AI (https://fit-track-fe.vercel.app) 06/2025
FastAPI, PostgreSQL, React (TypeScript), OpenAI GPT-4o, Leaflet.js

- Developed full-stack AI fitness platform that delivers personalized half-marathon training plans using GPT-4o and user-submitted daily logs.
- Engineered adaptive feedback loops driven by user mood, sleep, and workout data, resulting in a 14% faster 5k time in three weeks.
- Integrated OpenRouteService and Leaflet.js to render real-world running routes, making it easier for users to plan and explore optimal paths.
- Connected Strava API for seamless activity import and progress tracking across mobile and GPS devices.

Fine-Tuned BERT for Question Answering on SQuAD v1 06/2025
Python, Hugging Face Transformers, Weights & Biases

- Fine-tuned `bert-base-uncased` on SQuAD v1 using custom data preprocessing and postprocessing pipelines, achieving EM: 77.45% and F1: 85.19%.
- Boosted baseline model performance by 40+ points through progressive scaling, dynamic learning rate scheduling, and precision tuning.
- Visualized model metrics and experiments results in real-time using Weights & Biases, streamlining model iteration and debugging.

ValentinePlusPlus 02/2025
React, Express, Node.js, MongoDB

- Built a full-stack Valentine's Day card platform that delivered 150+ personalized messages, tailored to user-submitted preferences from the Vassar community.
- Integrated MongoDB and Node.js to dynamically update card content in real time based on live form inputs, enabling fully customized recipient experiences.
- Designed four animated, shareable card templates that boosted student engagement through personalized messages and interactive email links.

EDUCATION

Vassar College Poughkeepsie, NY
B.A in Computer Science and Mathematics (Double Major) 08/2021 - 05/2025

- GPA: 3.70/4.00
- Relevant coursework: Operating Systems • Bayesian Statistics • Modeling Minds, Brains, Behavior • Compilers

Coding Temple Remote
Certificate in Full-Stack Software Engineering (in progress) 05/2025 – Present

CERTIFICATIONS

Cognizant – CSA GenAI 07/2025

- Awarded Star Performer Badge for scoring 90%+ and demonstrating exceptional mastery across all GenAI projects.