Zelun He

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EDUCATION

Bachelor of Science in Computer Science, Minor in Mathematics **Expected December 2025**
Missouri State University - Springfield, MO

Technical Skills

Languages: C++, C, Python, JavaScript, TypeScript, Kotlin
Development: REST APIs, Prisma ORM, Full-Stack Development, Socket Programming, UI/UX Design
Tools & Frameworks: Next.js, FastAPI, Tailwind CSS, PyTorch, TensorFlow, Pandas, Wireshark, PostgreSQL

WORK EXPERIENCE

Software Engineering Intern **June 2025 – Present**
MyOasis.ai

- Build and scale backend systems for an AI journaling platform that analyzes and responds to user entries
- Architect and maintain relational database schemas using Prisma and PostgreSQL to support efficient data access and storage

Research Assistant – Deep Learning **January 2025 – Present**
Missouri State University | Supervisor: Yifan Zhang | Hui Liu

- Conducting ablation studies on Transformer architectures (Dozerformer) for time series forecasting, isolating encoder vs decoder contributions to streamline real-world models
- Developing a Transformer-based classifier for oncogene vs tumor suppressor gene sequences using DNABERT and curated COSMIC/OncoKB datasets

Software Engineering Intern **August 2025 – Present**
NeuralSeek

- Engineered multi-agent RAG pipelines and agent routing logic aligned with AWS Partner Network practices, boosting speed, accuracy, and reliability of knowledge-base responses

Software Engineering Intern **June 2025 – August 2025**
N-of-1 AI

- Developed a clinical documentation app with FastAPI, Next.js, and OpenAI APIs for audio transcription and note management, showcasing secure user management and production-ready deployment
- Architected a scalable backend (FastAPI + PostgreSQL + SQLAlchemy) with RESTful APIs for authentication and patient/note management, and built a React/TypeScript frontend (Tailwind CSS) for real-time validation and seamless UX

PROJECTS

Camouflaged Object Detection with U-Net and GraphCut | Python | PyTorch **January 2025 – May 2025**

- Built a custom U-Net segmentation model from scratch to detect camouflaged objects in the COD10K dataset, using BCE + Dice loss and GraphCut for post-processing
- Designed a full training pipeline with data filtering, augmentation, and evaluation scripts, achieving strong validation accuracy on filtered CAM-only samples

Real-Time Translation App | Kotlin | Python | FastAPI | Whisper | Android Studio **January 2025 – May 2025**

- Engineered a real-time translation app (Kotlin + FastAPI) combining Whisper + Google APIs for multilingual speech, with low-latency audio streaming and TTS playback

TCP/UDP Loan Calculator | C++ | Socket Programming **July 2024 – August 2024**

- Created a client-server applications using TCP and UDP to calculate loan payments, with custom protocol design and error handling for lost UDP messages
- Implemented a reliable message exchange, separate computation and communication modules, and clear documentation for reproducibility

EXTRACURRICULAR ACTIVITIES

President, Association of Computing Machinery **August 2024 – Present**
Missouri State University

- Organize and facilitate tech workshops, coding events, and industry speaker sessions, attracting a 50% increase in participation, fostering hands-on learning and engagement within the community