Zelun He

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EDUCATION

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

KEY COMPETENCIES

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

WORK EXPERIENCE

Software Engineering Intern   **June 2025 - Present**
N-f-1 AI
- Develop a production-grade AI medical scribe application designed to generate structured, real-time documentation from user input using LLMs and retrieval-augmented generation(RAG)
- Build autonomous AI agents that synthesize input into clinically relevant summaries, optimizing performance for real-world deployment using Docker, AWS, and Vercel AI SDK

Software Engineering Intern   **June 2025 – Present**
MyOasis.ai
- Build and scale backend systems for an AI journaling companion that analyzes and responds to user entries
- Design and manage relational database schemas using Prisma and PostgreSQL to support efficient data access and storage
- Develop frontend components with Next.js, TypeScript, and Tailwind CSS to ensure seamless user experience

Research Assistant – Deep Learning
Missouri State University | Supervisor: Dr. Hui Liu   **April 2025 – Present**
- Build a deep learning model to classify gene sequences as oncogenes or tumor suppressors with limited labeled data

Research Assistant – Deep Learning   **January 2025 – Present**
Missouri State University | Supervisor: Yifan Zhang
- Investigate architectural redundancy in the Dozerformer Transformer model for continuous time series forecasting through targeted ablation studies
- Design and implement modified architectures to isolate encoder and decoder contributions; findings contribute to ongoing efforts to streamline attention-based models for real-world temporal applications

PROJECTS

Camouflaged Object Detection with U-Net and GraphCut | Python | PyTorch | OpenCV
- 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 | Google Cloud API | GitHub | Android Studio
- Developed a real-time translation app combining Whisper and Google STT/Translate APIs for multilingual speech processing
- Designed a push-to-talk interface with audio streaming via Retrofit and low-latency feedback using FastAPI and TTS playback

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