WILSON ZHENG

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EDUCATION

Carnegie Mellon University (CMU) *Pittsburgh, PA*
Master of Science in Artificial Intelligence and Innovation May 2027

The University of Virginia (UVA) *Charlottesville, VA*
Bachelor's Degree in Computer Science & Physics May 2025
GPA: 3.91/4.0, Echols Scholar, College Science Scholar, Dean's List

Relevant Courses: Data Structures & Algorithms, Software Development Methods, Computer Architecture, Machine Learning, Cybersecurity, Compilers, Operating System, Database Systems, Cloud Computing, Quantum Computing

SKILLS

Programming Languages: Python, C++, C, C#, Java, HTML, CSS, JavaScript, SQL, GO, Bash, x86, ARMv8
Frameworks and Tools: Django, React, Postman, Git, Redis, Qdrant, PyTorch, TensorFlow, scikit-learn, Transformers, Librosa, OpenCV, Google Cloud Platform, AWS, Docker, Celery, MapReduce, Zookeeper, Unix, Unity

WORK EXPERIENCE

***Software Development Engineer Intern,* Amazon Web Services,** Beijing, China Jun 2025 – Aug 2025
- Engineered **Amazon Q**-powered AI unit test generation tool, achieving up to 90% improvement in code coverage
- Integrated solution into Amazon's internal build system and **CI/CD** pipeline, enabling automatic test generation for development teams, cutting down manual testing effort by 10 hours weekly
- Deployed scalable cloud infrastructure on **AWS** utilizing SQS, Lambda, and containerized services
- Established multi-layered quality filters with 100% reliability to remove LLM hallucinations

***Research Assistant, Game Developer,* UVA,** Charlottesville, VA Jun 2024 – Sep 2024
- Collaborated with University of Virginia physics faculty to create educational game teaching complex astrophysics concepts including black holes and gravitational waves in **Unity**
- Engineered infinite world generation system with physically accurate gravitational wave simulations, mimicking ripple effects with correct polarization

***Machine Learning Engineer Intern*, DataMIMO,** Palo Alto, CA May 2024 – Jul 2024
- Analyzed machine learning models to predict property values using **NumPy** and **scikit-learn**
- Created interactive data visualizations and sentiment analysis tools enabling clients to identify emerging market trends and investment opportunities
- Scraped web information with scripts using **ChromeDriver** and **Selenium** to enhance breadth of project datasets

***Data Analytics Intern,* L'Oréal,** Shanghai, China Jun 2022 – Aug 2022
- Solved critical security vulnerability by developing automated Identity and Access Management system, preventing unauthorized project access and ensuring compliance on **GCP** with Pub/Sub, Cloud Scheduler, and Cloud Function
- Post-processed 50,000+ consumer responses with **Python Pandas**, improved data organization and uniformity
- Implemented automated ML-based sentiment analysis system on GCP reducing manual analysis time

PROJECT EXPERIENCE

AI Podcast Platform Oct 2025 – Present
- Architected AI-powered podcast generation platform for personalized podcasts interleaved with real users' stories
- Engineered multi-modal ML pipeline integrating **Whisper ASR**, **OpenAI** embeddings for semantic vector search, GPT for conversation and script generation, and open-source **Text-to-Speech** models
- Implemented **RAG**-based AI host personality system with per-host knowledge bases, creating AI personas with curated expertise for contextually aware podcast commentary

Personal News Recommender Sep 2025 – Oct 2025
- Developed ML-powered news recommendation system with automated scraping pipeline, fine-tuned **DistilBERT** for topic classification, and **FAISS**-indexed semantic search over article embeddings
- Built **FastAPI** backend with **Celery** task queue for asynchronous article processing, **PostgreSQL** database, and **Redis** caching; implemented scheduled jobs for hourly news ingestion and classification
- Engineered recommendation engine combining content-based filtering using **Sentence Transformers** and collaborative filtering with matrix factorization algorithms

Hand Gesture-Based Keyboard Controller Mar 2025 – May 2025
- Developed a real-time computer vision-powered hand gesture recognition system with **PyTorch** and **OpenCV**, achieving 95% confidence for gesture classification across 12 distinct hand poses captured via webcam feed
- Built gesture-to-keyboard mapping application motivated by accessibility and hands-free computing needs