YUNCONG YU

949-527-2256 |17yuyuncong@gmail.com | linkedin.com/in/jeff-yuncong-yu | github.com/yuncongy

EDUCATION

University of Southern California Aug 2024 – Present
Master of Science, Computer Science *Los Angeles, CA*
- Analysis of Algorithms, Machine Learning, Computer Networks

University of California San Diego Jun 2021
Bachelor of Science, Math & Applied Science *La Jolla, CA*
- Data Structures and Algorithms, OOP, Database Systems, Signal Systems, Cryptography

TECHNICAL SKILLS

- **Languages**: Python, Java, C++, C, SQL, MATLAB, HTML, CSS, MIPS Assembly
- **Technologies**: PyTorch, Torchaudio, NumPy, Pandas, Scikit-Learn, MySQL, NX, Git, CI/CD

EXPERIENCE

Machine Learning Intern May 2025 – Present
Of Spectrum *Los Angeles, CA*
- Engineered a Python-based TTS data generation pipeline with API integration for dataset ingestion and multiprocessing/batch scheduling on RTX 4090, reducing processing time by 40% and producing 250K+ high-quality synthetic speech samples.
- Built a multi-turn conversation generator integrating with the Dia TTS model to simulate realistic dialogues and generate datasets for deepfake detection research.

Application Engineer Jul 2021 – May 2023
Siemens Digital Industries Software *Costa Mesa, CA*
- Developed 17 Python scripts to automate NX architecture and UI testing using Siemens internal test tools, integrated into CI/CD pipelines to accelerate regression checks and improve defect detection.
- Built and maintained 15 Python interactive test cases through NX Automated Testing Studio, enabling manual validation workflows and ensuring stability across 4+ major release cycles.
- Collaborated with global engineering and QA teams, mentoring 3 interns on NX Open scripting, debugging, and validation best practices to improve test automation efficiency.

Software Quality Assurance Intern Jun 2019 – Sep 2020
Siemens Digital Industries Software *Cypress, CA*
- Designed and implemented Python modules to boost automated test coverage from 0% to 80%+ for NX Appearance Management Project, integrating tests into CI/CD workflows to maintain release quality.
- Tested and verified 100% project problem reports for NX Virtual Reality, ensuring feature reliability and product release readiness.

PROJECTS

Speech Compression & TTS Representation Learning | *Python, PyTorch, NumPy, Pandas, Librosa*
- Implemented a VQ-VAE speech compression model from scratch, tuning codebook size and commitment cost; enabled mixed-precision + gradient accumulation to cut training time by 35% on RTX 3090; trained on Common Voice dataset for scalable TTS representation learning.

Core Machine Learning Algorithms – From Scratch | *Python, NumPy, Matplotlib*
- Implemented foundational ML algorithms (e.g., CNN, HMM, K-means, Transformer, Q-Learning, PCA) without high-level libraries to enhance understanding and transparency.
- Focused on modularity, visualization, and numerical stability for educational and experimental use.