Liang Kuang

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Education

Carnegie Mellon University — ***Pittsburgh,PA*** Aug. 2025 – Dec. 2026
Master of Science in Electrical and Computer Engineering
QPA: 4.0/4.0

Southern University of Science and Technology — ***China*** Sept. 2021 – Jun. 2025
Bachelor of Computer Science and Engineering (Turing Class)
GPA: 3.84/4.0

Honors

Gold Medal winner of The 46th ICPC Asia Regional Contest (2021 Shanghai Site) Nov. 2021
Silver Medal winner of The 2021 ICPC Asia-East Continent Final (2021 EC Final, Xi'an) Jul. 2022
Silver Medal winner of The 46th ICPC Asia Regional Contest (2021 Jinan Site) Nov. 2021

Work Experience

Research Intern — Federated Learning + Computer Vision Feb. 2024 – Jun. 2024
Institute of Automation, Chinese Academy of Sciences, Beijing, China

- Proposed and developed FedPLCC, a novel federated prototype learning algorithm that re-weights clustering prototypes and selectively aligns features across domains
- Implemented the method in PyTorch, and managed large-scale training with 50 communication rounds.
- Conducted experiments on Digit-5, Office-10, and DomainNet, achieving +4.6% average accuracy improvement over state-of-the-art baselines
- Published as first author: *"An Enhanced Federated Prototype Learning Method under Domain Shift,"* in Pattern Recognition and Computer Vision (PRCV 2025); code open-sourced

Selected Projects

Storyboard — AI-Powered Text-to-Video Generation Platform — Backend Engineer Nov. 2025 – Present
Industry-Collaborated Remote Project, ByteDance

- Designed and implemented the backend architecture of a text-to-video generation platform using FastAPI with a Turborepo monorepo, supporting automated transformation of story scripts into AI-generated visual content
- Built asynchronous, multi-stage generation pipelines (script analysis, character/scene image generation, TTS, video synthesis) using Celery + Redis, enabling reliable orchestration, progress tracking, and long-running tasks
- Developed a unified LLM and multimodal AI adapter layer integrating multiple providers (OpenAI, Gemini, Volcengine/Doubao), with configurable model routing for text, image, and speech generation
- Optimized prompts and pipeline logic to enable one-click conversion of text scripts into consistent character designs, scene concept images, and short-form video outputs

Sharded Key-Value Store — Distributed Storage System — Individual Project Aug. 2025 – Oct. 2025
Coursework Project, MIT-6.5840 Distributed Systems

- Developed a distributed key-value storage system from scratch in Go, integrating Raft-based consensus, fault-tolerant replication, and dynamic reconfiguration
- Achieved linearizable consistency and high availability across multiple Raft groups through sharding and automatic rebalancing
- Implemented snapshotting, log compaction, and failure recovery to maintain performance under continuous load and crash conditions
- Verified system safety and liveness properties via extensive integration tests simulating network issues

Skills

Programming: Go, Python, C/C++, TypeScript

Languages: English, Mandarin