Zun Ren Yao

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Summary

Experienced software engineer with over 8 years in software development, including expertise in video streaming, codecs, and image/video processing. Skilled in optimising complex systems, delivering scalable real-time solutions, and contributing to backend development and algorithm research. Recent experience focuses on audio processing, recognition algorithm development, machine learning, system design, and microservices. A proactive problem solver and collaborative team player, eager to learn and adapt to emerging technologies.

Experience

Software Developers, Soundmouse   April 2023 - present
- Designed and implemented advanced machine learning models, driving significant accuracy improvements in audio recognition systems through innovative algorithm research.
- Optimised Kafka-based recording systems, achieving an 80% reduction in operational costs and a 75% decrease in resource usage while enhancing real-time data throughput.
- Led a high-priority proof-of-concept (PoC) for cloud migration of the audio recognition system, delivering a comprehensive performance evaluation within one month, meeting critical business deadlines.
- Streamlined the cue sheet generation process by developing robust, maintainable automation tools, cutting manual effort by 80% and improving accuracy.
- Upgraded system monitoring capabilities, enabling early outage detection and reducing manual intervention time by 50% through proactive alert systems.
- Conducted in-depth client asset analyses, implementing solutions that cut processing costs by up to 80% without compromising reporting accuracy or quality.

Senior Software Engineer, Wondercise   Feb 2021 - May 2022
- Improved multi-profile video encoding speed from 50% to real-time (100%) by integrating hardware accessories.
- Designed and implemented a robust live streaming segment push scheduler, delivering seamless integration with AWS KVS in a PoC deployment.
- Streamlined live video delivery by integrating RTMP and WebRTC protocols, ensuring high-quality, low-latency streaming for real-time applications.
- Engineered a Yoga Pose detection system utilising Mediapipe, enabling precise motion tracking and analysis for fitness applications.

Video Streaming Engineer, KKStream   Aug 2019 - May 2020
- Ensured reliability and performance of live and video encoding systems by maintaining infrastructure, troubleshooting critical issues, and developing new features to meet evolving requirements.
- Developed scalable APIs and seamlessly integrated them into streaming systems, enhancing functionality and user experience for video delivery workflows.
- Oversaw the end-to-end management of VoD and live streaming billing systems, ensuring accurate invoicing, scalability, and cost efficiency.

Algorithm Researcher, Novatek   Feb 2017 - Dec 2018
- Developed perceptual preprocessing filters, reducing bitrate by 60%-90%.
- Fine-tuned video encoding parameters and collaborated with the hardware designer for hardware adjustments.
- Evaluated spatial/temporal noise reduction to optimise visual quality and bitrate.

Algorithm Engineer, Faraday   Nov 2015 - Feb 2017
- Conducted H.264 rate control and adaptive QP evaluation.
- Assisted with encoder IPs FPGA verification and quality assessment.

Education

National Taiwan University - Master of Computer Science
National Taipei University - Bachelor of Computer Science

Technical Skills

Programming language: C/C++, Python, Matlab
Knowledge: Linux, Kubernetes, Image/Video processing, Image quality, AVC, HEVC, FPGA validation, AWS, AWS Elemental service, RESTful API, PostgreSQL, MySQL, Machine learning