Kuan-Ru (Randy) Huang

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EDUCATION

Texas A&M University — **College Station, TX**
MS in Computer Science — Agu. 2024 – June 2026(Expected)
- GPA: 3.83/4.0

National University of Kaohsiung (NUK) — **Kaohsiung, Taiwan**
BBA in Information Management — Sep. 2020 – June 2024
- GPA: 3.29/4.0 | Last 60 credits: 3.54/4.0

PUBLICATION

Huei-Jiun Yang, **Kuan-Ru Huang**, Sheng-Po Wang, Ching-Chieh Lin, Chun-Lung Lin (ITRI), "[VCM][CE4-Related] The simplification of temporal up-sampling method," ISO/IEC JTC 1/SC 29/WG 4 m65098, Oct. 2023, Hannover
A modification related to the temporal up-sampling method to simplify the interpolation procedure by skipping SSIM calculation and subsequent condition selection. This proposed method shows no substantial performance change in the average BD-rate under the All-Intra, Random Access, and Low Delay test conditions.

WORK EXPERIENCE

Computer Science and Engineering Dept., Texas A&M University — **College Station, US**
Student Assistant (Grader) | Advisor: Dr. Shawn Lupoli — Aug. 2025 – Present
- Evaluated assignments, applied consistent grading rubrics and gave feedback to students.

Information and Communications Research Lab., Industrial Technology Research Institute — **Hsinchu, Taiwan**
Part-time Intern (20 Hours/week) | Advisor: Dr. Chun-Lung Lin — Feb. 2024 – June 2024
- Researched and introduced over 20 papers related to attention mechanism, channel pruning, quantization and entropy coding, proposing feasible mechanisms to meet team's needs
- Implemented SENet experiments from Github, presented the structure and evaluation of the mechanism

The Department of Information Management, NUK — **Kaohsiung, Taiwan**
Research Assistant (50 hours/month) | Advisor: Dr. Chia-Chi Chang — Apr. 2023 – June 2024
- Developed functions in R for computing indicators such as similarity, HHI, and originality as well as citation/referencing status of company patents for evaluating company development
- Organized data for multiple patent holders and verified their accuracy manually

Information and Communications Research Lab., Industrial Technology Research Institute — **Hsinchu, Taiwan**
Full-time Intern | Advisor: Dr. Chun-Lung Lin — July 2023 – Sep. 2023
- Researched high-efficiency video coding machines, contributing to MPEG-4 (an ISO/IEC working group)
- Designed experiments to improve mAP, which evaluates object detection algorithms based on video frames, by identifying objects' moving rate in each pair of frames with aim of adjusting the interpolation pattern accordingly
- Scripted process of managing 15 DELL servers and building simulation environments within the Linux domain

PROJECTS

LLM Safety
- Exposed the critical security risks of language-mediated coordination by evaluating baseline attack and defense benchmarks on multi-agent driving.

Adaptive Segmentation for Extreme Image Compression
- Extended a deep learning system for image compression using Python and PyTorch, integrating segmentation masks during training stage to preserve important image details at lower bitrates.
- Optimized GPU performance and resolved memory/dimension issues by debugging tensor operations.

Gym Buddy Finder Application – Ruby on Rails
- Developed an application connecting users with workout buddies based on the user's background and preferences.
- Built interactive front-end interfaces with Rails views and integrated user authentication for secure access.
- Implemented a real-time private chat system using ActionCable (WebSockets) with PostgreSQL message storage, enabling secure one-on-one communication between matched users.

Emotion Recording Application
- Preprocessed text with the CKIP Transformer to remove neutral words/symbols and built an emotion detection model achieving 83% accuracy, 85% precision, 80% recall.
- Quantified emotions in Mandarin social media/chat data by fine-tuning SnowNLP for improved comprehension.

SKILLS & CERTIFICATE

SAS Certified Specialist: Machine Learning Using SAS Viya 3.5, SAS, June 2023
Languages: Mandarin (native), English (fluent)