Kuan Heng (Jordan) Lin

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Education

Computer Science B.S., minor in Mathematics *September 2021–Present*
University of California, Los Angeles (GPA: 4.0, Dean's Honor List, Upsilon Pi Epsilon)
Coursework: Computer Vision, Graphics, Deep Learning, Algorithms & Data Structures, Imaging, Programming Languages, Operating Systems, Software Construction, Systems, Theory of Computing, Linear Algebra, Analysis, Probability, Statistics, and more

Skills

Research: Generative AI, computer vision, machine learning, optimization, explainability, image processing, natural language processing
Programming: `Python` (`PyTorch`, `TensorFlow`, `JAX`), `C++`, `C`, `Assembly`, `R`, `MATLAB`, `Rust`, `Haskell`, `React`, `Flask`, `JavaScript`, `HTML/CSS`

Research

Undergraduate Researcher | Zhou Lab at UCLA *March 2023–Present*
- Inject temporal and instance consistency to Stable Diffusion and ControlNet vision models with inter-frame attention mechanisms, simulation-in-the-loop conditioning, and NeRF-based 3D consistency for video generation in `PyTorch`.
- Develop novel methods for semantic latent space manipulation of diffusion models with deterministic and stochastic sampling, leveraging inversion to perform direct real-image editing and visualize diffusion latent guidance to measure dataset and model bias.

URC-Sciences Summer Program Scholarship Researcher | Zhou Lab at UCLA *June 2023–September 2023*
- Design first ever open-source human-in-the-loop video generator by extending Stable Diffusion with video guidance. *Ongoing.*

Undergraduate Researcher | The Ozcan Research Group (HHMI Program) *October 2022–Present*
- Design Fourier residual and attention blocks for diffusion autoencoders and generative adversarial networks for accurate and disentangled hologram reconstruction, super-resolution, and axial distance prediction at reduced network sizes.

Student Researcher | The Bouchard Lab at UCLA *April 2022–June 2023*
- Design and implement novel Levenberg–Marquardt optimizer for via Hessian-free and Accelerated methods with back-propagation and Fourier methods in both `TensorFlow` and `PyTorch` with `CUDA` on distributive multi-stage training networks.

Conference Paper Co-author, Presenter | AIPR 2020 *April–November 2020*
- Published a conference paper examining political bias via social network feature extraction with named entity recognition.

Work Experience

Program Development Team | UCLA CS, UCLA CAE, Learning Assistant Program *June 2022–Present*
- Optimize & automate LA application and review with Airtable `JavaScript` and Gmail scripting for 600+ applicants supporting 14000+ students in UCLA STEM courses, streamlining applicant review and communication for a downsized (33%) PDT team.
- Advertise the LA program to increase applicants for key CS courses by 300% and communicate with professors & administrators for high-demand courses to be supported by the program, empowering more students through collaborative and inclusive teaching.

Head Learning Assistant | UCLA Computer Science, Learning Assistant Program *March 2022–June 2022*
- Lead weekly discussions and bi-weekly workshops for COM SCI 33: Computer Organization to review material and lead worksheets for 400+ students. Reviewed very positively, notably my willingness to help, clarity of explanations, and passion for teaching.
- Organize meetings, plan pedagogy activities and workshops, and host content meetings to facilitate and mentor CS 33 LAs.

Experience & Projects

Co-President, Workshops Officer | ACM Student Chapter at UCLA, AI Committee *May 2022–Present*
- Host weekly reading groups that meet and discuss recent ML papers, such as deep generative vision, modern reinforcement learning, and federated learning, culminating in project and event ideas for general members such as the adversarial AI competition.
- Spearhead general member programs (e.g., special topics discussions) and bold initiatives (e.g., AI hackathons, research team, shared compute, inter-comittee collaborations) which drastically improved member retention, officer burnout, and club exposure.
- Revamp beginner track and advanced track workshop topics on machine learning topics such as gradient descent, automatic differentiation, `Python` package management, and utilizing `Python` notebooks, improving retention by 100%.

Hackathons | `PyTorch`, `TensorBoard`, `React.js`, `Flask`, `Solidity`, `Web3.js` *January 2022–Present*
- LA Hacks 2023 (Overall Third Place), people2vec: Social media platform powered by LLMs, CV, and YouTube watch histories that matches people by their media interests. Integrated sentence embeddings and `Inception V3` features for distribution analysis to compute interest similarity. Visualize user data with PCA "video cloud" to convey matched interests while preserving privacy.
- HackMIT 2022 (Blockchain for Society Second Place), Wikisafe: Crowd-sourced knowledge database powered by machine learning and blockchain for secure version management. Integrated fine-tuned text summarization, caption generation, and generative imagery `PyTorch` models and `Solidity` smart contracts on the Ethereum blockchain with `Web3.js` in a full-stack web application.

Assistant Managing Editor of Review | UCLA Undergraduate Science Journal *January 2022–Present*
- Draft and polish letters to authors which succinctly culminate and summarize all reviewer reviews, provide constructive and detailed feedback for authors, and prepare comprehensive reports for the editorial board for further communication.
- Lead small teams of reviewers to set rigorous benchmarks and helpful guidelines for reviewing papers.