

Lun Huang

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Summary

- PhD candidate in ECE at Duke University & visiting student at Princeton University.
- Specializing in Generative AI, Multimodal Systems, and Representation Learning.

Education

- **Duke University** Durham, NC, USA
PhD Student, Electrical and Computer Engineering Aug. 2020 – Mar. 2026 (expected)
 - Supervisor: Guillermo Sapiro
 - Research Areas: Generative AI, Representation Learning
- **Princeton University** Princeton, NJ, USA
Visiting Student, Electrical and Computer Engineering Aug. 2024 – Mar. 2026 (expected)
 - Supervisor: Guillermo Sapiro
 - Research Areas: Generative AI, Representation Learning
- **Peking University** Beijing, China
M.S., Computer Applied Technology Sep. 2017 – Jul. 2020
 - Thesis: Towards Accurate Attention Mechanisms for Image Captioning
 - Research Areas: Multimodal Systems, Reinforcement Learning
- **Huazhong University of Science and Technology** Wuhan, China
B.E., Electronic and Information Engineering Sep. 2013 – Jun. 2017
 - National Key Class (top students in CS/EE fields)
 - GPA: 3.7/4.0

Experience

- **ByteDance** San Jose, CA, USA
Research Intern, Generative AI May 2025 – Dec. 2025
 - Developed **Plan-X**, a novel framework that decouples high-level agentic planning from low-level video generation to enhance long-horizon consistency.
 - Designed a semantics-driven conditioning mechanism that significantly reduced visual hallucinations and improved prompt alignment over state-of-the-art baselines.
- **Microsoft Research Asia** Beijing, China
Research Assistant (StarBridge Program), Multi-modal Learning Jun. 2020 – May 2021
 - Developed **Godiva**, an open-domain text-to-video model using 3-D sparse attention and large-scale multimodal data pipelines.
- **Tencent AI Lab** Shenzhen, China
Research Intern, Reinforcement Learning & AutoML Apr. 2019 – Sep. 2019
 - Applied Reinforcement Learning to optimize game-AI agent populations, focusing on automated reward shaping and agentic behavior optimization.

Selected Publications

1. **Lun Huang**, You Xie, Hongyi Xu, Tianpei Gu, Chenxu Zhang, Guoxian Song, Zenan Li, Xiaochen Zhao, Linjie Luo, Guillermo Sapiro. *Plan-X: Instruct Video Generation via Semantic Planning*. **arXiv:2511.17986**, 2025.
2. **Lun Huang**, Qiang Qiu, Guillermo Sapiro. *SSOLE: Rethinking Orthogonal Low-rank Embedding for Self-Supervised Learning*. In **International Conference on Learning Representations (ICLR)**, 2025.
3. Jing Xiong, Gongye Liu, **Lun Huang**, Chengyue Wu, Taiqiang Wu, Yao Mu, Yuan Yao, Hui Shen, Zhongwei Wan, Jinfa Huang, Chaofan Tao, Shen Yan, Huaxiu Yao, Lingpeng Kong, Hongxia Yang, Mi Zhang, Guillermo Sapiro, Jiebo Luo, Ping Luo, Ngai Wong. *Autoregressive Models in Vision: A Survey*. **Transactions on Machine Learning Research (TMLR)**, 2025.
4. **Lun Huang**, Qiang Qiu, Guillermo Sapiro. *PQ-VAE: Learning Hierarchical Discrete Representations with Progressive Quantization*. In **CVPR Workshops**, 2024.
5. Chenfei Wu*, **Lun Huang***, Qianxi Zhang, Binyang Li, Lei Ji, Fan Yang, Guillermo Sapiro, Nan Duan. *Godiva: Generating Open-Domain Videos from Natural Descriptions*. **arXiv:2104.14806 (300+ citations)**, 2021.
6. **Lun Huang**, Wenmin Wang, Jie Chen, Xiao-Yong Wei. *Attention on Attention for Image Captioning*. In **IEEE International Conference on Computer Vision (ICCV)**, (Oral presentation, 1300+ citations), 2019.
7. **Lun Huang**, Wenmin Wang, Yaxian Xia, Jie Chen. *Adaptively Aligned Image Captioning via Adaptive Attention Time*. In **Advances in Neural Information Processing Systems (NeurIPS)**, 2019.
8. Jinfa Huang, Shenghai Yuan, Kunyang Li, Meng Cao, **Lun Huang**, Chunming He, Zeyue Xue, Qihui Zhang, Ming Li, Yixiong Chen, Xinyi Bai1, Shanshan Zhong, Liuhan Chen, Tan Wang, Alan Yuille, Guillermo Sapiro, Li Yuan, Mubarak Shah, Jiebo Luo. *Personalized Video Generation: Progress, Applications, and Challenges*. **Under Review**.
9. **Lun Huang**, J. Matias Di Martino, Guillermo Sapiro. *Privacy-First Attribute Preserving Face Anonymization via ID-Augmented Contrastive Learning*. **Under Review**.

Honors & Awards

- National Scholarship, Ministry of Education of China (2019)
- Outstanding Graduate (Beijing & PKU 2020, HUST 2017)
- Exceptional Award for Academic Innovation, PKU (2019)

Skills

- **Programming:** Python, C/C++, PyTorch.
- **Expertise:** Agentic Planning, Diffusion Models, Video Generation, Self-Supervised Learning, Reinforcement Learning.
- **Languages:** English (fluent), Chinese (native)