Hui Xian Grace Lim

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EDUCATION

University of Central Florida — **Orlando, FL**
Ph.D. in Computer Science — Expected graduation May 2028
Honors: Graduate Trustees Doctoral Fellowship

Rhodes College — **Memphis, TN**
B.S. in Computer Science, B.S. in Physics — May 2023
GPA: 4.00 majors, 3.99 overall, *summa cum laude*
Honors: Honor Roll (2019-2023), Merit Scholarship: Dean's Fellowship, Sigma Pi Sigma, Phi Beta Kappa

WORK EXPERIENCE

Center for Research in Computer Vision, University of Central Florida — **Orlando, FL**
Graduate Research Assistant — Present

- Developed a system to interpret hand motions for image generation, contributing to the application of machine learning and image generation in AR/VR.
- Further investigated and exposed capabilities of diffuser-based image generation for view generation.

Center for Integrated Mobility Sciences, NREL — **Remote**
SULI Intern — Summer 2023

- Developed and implemented a classifier-agnostic method to estimate the uncertainty of phone-sensor mode predictions in python.
- Ran experiments with large datasets using Docker and Python to test uncertainty-estimation methods, submitted a paper to the TRB 2024 annual meeting, and made a poster on the results to present to other colleagues.

CAMP Lab, Clemson University — **Clemson, SC**
NSF REU Intern — Summer 2022

- Designed virtual character gesture perception experiments using Unity, Maya, and Blender to animate 3D models with various hand motion conditions.
- Ran experiments in VR in person and through Mechanical Turk, made a technical report and poster on the findings to present to other colleagues.

Department of Physics, Rhodes College — **Memphis, TN**
Peer Tutor, Teaching Assistant — Fall 2021 – Spring 2023

- Worked individually with 5+ students in weekly tutoring sessions
- Lead exam study sessions and assisted students in test corrections
- Reviewed answers for accuracy and helped students understand introductory physics and astronomy concepts
- Maintained and operated 8-inch Celestron Telescopes
- Set up and organized introductory physics and astronomy lab equipment

Student Researcher — Summers 2020, 2021

- Developed software for spectroscopic imaging of quasar hosts with a PSF decomposition and spectral analysis package for a JWST ERS program
- Refactored, debugged, and updated IDL software into Python to be compatible with the JWST

PUBLICATIONS

1. H. X. G. Lim, X. Cui, Y. S. Rawat, and S. N. Lim, "AirSketch: Generative Motion to Sketch," in *Conference on Neural Information Processing Systems*, 2024. [Online]. Available: https://arxiv.org/abs/2407.08906

2. R. Hussain, H. X. G. Lim, B. Chen, M. Shah, and S. N. Lim, "FSViewFusion: Few-Shots View Generation of Novel Objects," 2024. [Online]. Available: https://arxiv.org/pdf/2403.06394.pdf

3. H. X. G. Lim, M. Allen, and K. Shankari, "Count Multivariate Metrics: Estimate Mode Count and Distance Uncertainty from Phone Sensors," in *Transportation Research Board Annual Meeting 2024*, 2024.

4. S. Veilleux *et al.*, "First Results from the JWST Early Release Science Program Q3D," *The Astrophysical Journal*, vol. 953, no. 1, p. 56, 2023. doi: 10.3847/1538-4357/ace10f.

5. A. Vayner *et al.*, "First Results from the JWST Early Release Science Program Q3D: Ionization Cone, Clumpy Star Formation, and Shocks in a z = 3 Extremely Red Quasar Host," *The Astrophysical Journal*, vol. 955, 2023. doi: 10.48550/arXiv.2307.13751.

6. A. Vayner *et al.*, "First results from the JWST Early Release Science Program Q3D: Powerful quasar-driven galactic scale outflow at z = 3," 2023. [Online]. Available: https://doi.org/10.48550/arXiv.2307.13751.

PRESENTATIONS

1. Lim, H. X. G., Cui, X., Rawat, Y. S., Lim, S.N. *AirSketch: Generative Motion to Sketch*. Conference on Neural Information Processing Systems, 2024. Vancouver, Canada.

2. Lim, H. X. G., Justice, J., Adkins, A., Jörg, S. *The Perception of Hand Gestures in Conversational Virtual Characters*. Undergraduate Research Symposium, 2022. Clemson University, Clemson, SC.

3. Lim, H. X. G., Whitesell, L. *Quasar Observations with the James Webb Space Telescope*. Conference for Undergraduate Women in Physics, 2022. American Physics Society, Virtual.

SKILLS

- Programming languages: Python, HTML, CSS, JavaScript, Java, C++, C#, C, IDL, R, Standard ML
- Tools, libraries, and environments: Mathematica, Microsoft Office, GitHub, Weka, Unity, Maya, Blender, bash shell, Docker, RStudio, Jupyter Notebooks, Visual Studio Code, PyTorch