

Hui Xian Grace Lim

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EDUCATION

Rhodes College

B.S. in Computer Science, B.S. in Physics

GPA: 4.00 majors, 3.99 overall, *summa cum laude*

Honors: Honor Roll (2019-2023), Merit Scholarship: Dean's Fellowship, Sigma Pi Sigma Membership, Phi Beta Kappa Membership

Memphis, TN

May 2023

University of Central Florida

Ph.D. in Computer Science

Honors: Graduate Trustees Doctoral Fellowship

Orlando, FL

Expected graduation May 2028

WORK EXPERIENCE

Department of Physics, Rhodes College

Peer Tutor

- Worked individually with 5+ students in weekly tutoring sessions
- Lead exam study sessions and assisted students in test corrections
- Built up students' confidence in applying introductory physics concepts

Memphis, TN

Fall 2022, Spring 2023

Teaching Assistant

- Explained and clarified lab instructions and problems as needed
- Reviewed answers for accuracy and helped students understand difficult concepts
- Maintained and operated 8-inch Celestron Telescopes
- Set up and organized Introductory Physics and Astronomy lab equipment

Fall 2021, Fall 2022

Student Researcher

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

Summers 2020, 2021

Department of Computer Science, Rhodes College

Student Researcher

- Reviewed papers on proposed genome sequencing methods
- Used deNovo assembly on mitochondrial genomes and low-coverage, whole genome sequences using the Lotus HPC cluster.

Memphis, TN

Spring 2021

CAMP Lab, Clemson University

NSF REU Intern

- 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.

Clemson, SC

Summer 2022

Center for Integrated Mobility Sciences, NREL

SULI Intern

- 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.

Remote

Summer 2023

- 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.

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