Levi Harris

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RESEARCH INTERESTS

Computer Vision, **Quantitative Precipitation Estimation (QPE)**

EDUCATION

University of North Carolina at Chapel Hill   *Fall 2025*
M.S. Computer Science – *Advisor: Prof. Tianlong Chen*

University of North Carolina at Chapel Hill   *Spring 2024*
B.S. Computer Science
Minor in Data Science

EXPERIENCE

UNITES Lab   Chapel Hill, NC
PI: Prof. Tianlong Chen   *Fall 2024 - Winter 2025*

- Graduate research assistant. AI4Science research, esp. metrology and meteorology.

Multimodal Video Perception (MVP) Lab   Chapel Hill, NC
PI: Prof. Gedas Bertasius   *Spring 2023 - Fall 2024*

- Undergraduate research assistant. Developed datasets and models for video understanding.

The National Weather Service   Las Vegas, NV
Intern — Mentor: Stanley Czyzyk   *Summer 2025*

- Development of machine learning-assisted radar QPE algorithms.

Bank of America   Plano, TX
SWE Intern — Mentor: Joey Bondoc   *Summer 2023*

SELECTED PUBLICATIONS & PRE-PRINTS

1. Oscar Ovanger, <u>Levi Harris</u>, Timothy H. Keitt, "Adaptive Evidence Weighting for Audio-Spatiotemporal Fusion", *arXiv preprint arXiv:2602.03817*, 2026. *Under review at ICML 2026.*
2. <u>Levi Harris</u>, Matthew Woods, Stanley Czyzyk, Yagmur Derin, Pierre Kirstetter, "Environmental Drivers of MRMS Radar QPE Error in the Desert Southwest", 2026. *In Preparation for the Journal of Hydrology*
3. <u>Levi Harris</u>, Tianlong Chen, "A Space-Time Transformer for Precipitation Nowcasting", **1st Place NeurIPS 2025 Weather4Cast Challenge**, *arXiv preprint arXiv:2511.11090*, 2025.
4. <u>Levi Harris</u>, Md Jayed Hossain, Mufan Qiu, Ruichen Zhang, Pingchuan Ma, Tianlong Chen, Jiaqi Gu, Seth Ariel Tongay, Umberto Celano, "SparseC-AFM: a deep learning method for fast and accurate characterization of MoS_2 with C-AFM," *SPIE Conference on Low-Dimensional Materials and Devices; paper 13582-35, 2025.*
5. <u>Levi Harris</u>, "A Simple and Effective Temporal Grounding Pipeline for Basketball Broadcast Footage", *arXiv preprint arXiv:2411.00862*, 2024.

TALKS/PANEL DISCUSSIONS

"SaTformer" [Oral]   *6 December 2025*
NeurIPS 2025 Weather4Cast Challenge   San Diego, CA

"SparseC-AFM" [Author]   *17 September 2025*
SPIE Conference on Low-Dimensional Materials and Devices 2025   San Diego, CA
"Decoding Graduate Research at UNC" [Panelist]   *14 October 2025*
UNC CSSG   Chapel Hill, NC
"AI is Easy! My journey as an undergraduate researcher"   *29 November 2023*
UNC AI Club Symposium   Chapel Hill, NC

AWARDS

Department Tuition Award (approx. $10,000)   2024, 2025
Undergraduate Research Stipend (approx. $5000)   2023, 2024
Dean's List   2022, 2023, 2024

TEACHING

DATA 120: Ethics of Artificial Intelligence
Teaching Assistant — Instructor: Prof. Santiago Olivella   Fall 2025
Teaching Assistant — Instructor: Prof. Justin Sola   Spring 2025
Teaching Assistant — Instructor: Prof. Neil Gaikwad   Fall 2024

MENTORING

Asyat Sow (UNC Chancellor's Scholar)   Summer 2025
Undergraduate · Project Mentor
"Failure Modes of Real-Time Speech-to-Speech Translation Systems on French Regional Dialects"
Wonjae Oh   Fall 2024
Undergraduate · Project Mentor
"A Day-One Jailbreak for GPT-4V using ASCII Ciphers"

SKILLS

Programming Languages	Python (fluent), Java, C, JavaScript, TypeScript, Swift, Bash, SQL
Frameworks	PyTorch, TensorFlow, Angular, SpringBoot, UIKit
Databases	Oracle, Firebase
Tools	High-Performance Computing, Git, Docker, VertexAI
SPM	Gwyddion, MATLAB, ImageJ

SELECTED COURSES

Multivariate Calculus · Introduction to Probability · Linear Algebra · Introduction to Machine Learning · Computational Imaging · Video Recognition with Transformers · Computer Vision of our 3D World · Efficient Machine Learning · Transfer Learning · Ordinary Differential Equations* · Introductory Calculus-based Mechanics and Relativity* · Mathematical Methods for the Physical Sciences I*

*Planned Spring 2026

REFERENCES

Prof. Tianlong Chen
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Prof. Pierre Kirstetter
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