

RESEARCH INTERESTS

Human Behavior Analysis [[CVPRW'23](#), [IEEEAccess](#)] with Multimodal Data [[WACV'25](#)] and Visual Temporal Modeling [[Sensors](#)], Vision-Language Models (VLMs) [[MVA](#)], Vision Large Language Models (VLLMs) [[IVC](#)], Gen AI, and Foundational Models [[IJCV](#), [CVPR'25](#)]

EDUCATION

University of Arkansas, Fayetteville, AR

Ph.D. in Computer Engineering

Jan 2021 - May 2025

- PhD Thesis Title: “Vision-Based Multimodal Approaches in Human Behavior Analysis: Bridging Group Activity Recognition and Healthcare Monitoring” (Advisor: Asst. Prof. [Khoa LUU](#))

Purdue University, Indianapolis, IN

M.S. in Computer Engineering

Aug. 2018 - May 2020

- Masters Thesis Title: “[Squeeze-and-Excitation SqueezeNext: An Efficient DNN for Hardware Deployment](#)” [[CCWC'20](#)][[MIC'20](#)] (Advisor: Prof. [Mohamed El-Sharkawy](#))

RESEARCH EXPERIENCE

Computer Vision and Image Understanding Lab, Fayetteville, AR

Graduate Research Assistant

Jan 2021 - Present

- Conducting research on Group Activity Recognition (Multimodal data {[Image](#), [Text](#) and [LiDAR](#)}), and [Self-supervised Learning](#).
- Currently working on tobacco content moderation with responsible AI using [VLMs](#), [VLLMs](#), and [Foundational Models](#) using social media data which is under review for [CVPR '25](#).

IoT Collaboratory, Indianapolis, IN

Graduate Research Assistant

Jan. 2019 - May 2020

- Enhanced accuracy and training speed for Neural Network Architectures using the PyTorch Framework, implemented on NXP iMX-RT1060 EVKB and NXP BlueBox.
- Developed ADAS systems based on these enhancements and contributed to Radar and Lidar sensors integration and simulation.

Defence Research Development Laboratory, Hyderabad, India

Instrumentation Engineering Intern

May 2017 - July 2017

- Project titled “Measurement of C-type Thermocouple Using K-type Signal Conditioning Unit” is done on MATLAB by using the standard thermocouple datasheet to obtain the respective thermocouple co-efficients, which are helpful for the conversion of one thermocouple output to other. Performed Static Analysis, Unit testing and Integration testing of this software.

SELECTED PUBLICATION

Journal Articles

- **Chappa, Naga Venkata Sai Raviteja**, Page Daniel Dobbs, and Khoa Luu. Public health advocacy dataset: A dataset of tobacco usage videos from social media. *International Journal of Computer Vision*, 2024. **Under review**
- **Chappa, Naga VS Raviteja**, Page Daniel Dobbs, Bhiksha Raj, and Khoa Luu. Flaash: Flow-attention adaptive semantic hierarchical fusion for multi-modal tobacco content analysis. *Neurocomputing*, 2024. **Under review**
- **Chappa, Naga Venkata Sai Raviteja**, Pha Nguyen, Thi Hoang Ngan Le, Page Daniel Dobbs, and Khoa Luu. Hatt-flow: Hierarchical attention-flow mechanism for group-activity scene graph generation in videos. *Sensors*, 24(11):3372, 2024
- **Chappa, Naga VS**, Pha Nguyen, Page Daniel Dobbs, and Khoa Luu. React: Recognize every action everywhere all at once. *Machine Vision and Applications*, 35(4):102, 2024
- **Chappa, Naga VS**, Pha Nguyen, A. N., H.-S. S., Xin Li, P. D., and Khoa Luu. SoGAR: Self-supervised Spatiotemporal Attention-based Social Group Activity Recognition. *IEEE Access*, 2024. **Under review**
- Ibsa Jalata, **Chappa, Naga Venkata Sai Raviteja**, Thanh-Dat Truong, Pierce Helton, Chase Rainwater, and Khoa Luu. Eqadap: Equipollent domain adaptation approach to image deblurring. *IEEE Access*, 10:93203–93211, 2022

Conference Papers

- **Chappa, Naga Venkata Sai Raviteja** and Khoa Luu. Ligar: Lidar-guided hierarchical transformer for multi-modal group activity recognition. In *IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2025
- **Chappa, Naga VS Raviteja**, Charlotte McCormick, Susana Rodriguez Gongora, Page Daniel Dobbs, and Khoa Luu. Advanced deep learning techniques for tobacco usage assessment in tiktok videos. In *2024 IEEE Green Technologies Conference (GreenTech)*, pages 162–163. IEEE, 2024

- **Chappa, Naga VS**, Pha Nguyen, Alexander Nelson, H.-S. S., Xin Li, Page Dobbs, and Khoa Luu. SPARTAN: Spatiotemporal Transformers Approach to Self-supervised Group Action Recognition. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2023. **3rd Place Award**
- Thanh-Dat Truong, **Chappa, Ravi Teja NVS**, Xuan-Bac Nguyen, Ngan Le, Ashley PG Dowling, and Khoa Luu. Otadapt: Optimal transport-based approach for unsupervised domain adaptation. In *2022 26th international conference on pattern recognition (ICPR)*, pages 2850–2856. IEEE, 2022
- **Chappa, Ravi Teja NVS** and Mohamed El-Sharkawy. Deployment of se-squeezenext on nxp bluebox 2.0 and nxp i. mx rt1060 mcu. In *2020 IEEE Midwest Industry Conference (MIC)*, volume 1, pages 1–4. IEEE, 2020
- **Chappa, Ravi Teja NVS** and Mohamed El-Sharkawy. Squeeze-and-excitation squeezenext: An efficient dnn for hardware deployment. In *2020 10th Annual Computing and Communication Workshop and Conference (CCWC)*, pages 0691–0697. IEEE, 2020
- **Chappa, Ravi Teja NVS**, Bhaskara Rao Jammu, Maheswari Adimulam, and Maneesh Ayi. Vlsi implementation of ltssm. In *2017 International conference of Electronics, Communication and Aerospace Technology (ICECA)*, volume 1, pages 129–134. IEEE, 2017

TECHNICAL SKILLS

Proficient: Computer Vision, Deep Learning, JavaScript, Algorithms, Python, C/C++, L^AT_EX
Familiar: React.js, Node.js, Software Deployment, Embedded Systems, Mobile App Development

HONORS AND AWARDS

UARK Doctoral Student Presentation Travel Grant *June 2023*
21st Century Research Leadership Award and Fellowship *Jan 2023, Aug 2022*
Cora E. Sanders Memorial Graduate Fellowship *Jan 2025*
Reginald R. “Barney” & Jameson A. Baxter Graduate Fellowship *Aug 2024, Jan 2024, Aug 2023*
Third Prize, CVSports Workshop at CVPR 2023 *June 2023*

SUCCESSFUL GRANTS

Arkansas Bioinformatics Institute Grant (Budget: 35k\$) 2024-2025
 NSF-SCH Grant (Under Review) (Budget: 3M\$) 2025-2029
 USC-TCORS Grant (Under Review) (Budget: 50k\$) 2025-2026
 Blue & You Foundation Grant (Under Review) (Budget: 200k\$) 2025-2027

TEACHING EXPERIENCE

Computer Architecture (Instructor: *Prof. David Andrews*)
Graduate Teaching Assistant *Jan 2022 - May 2022*
Digital System Design (Instructor: *Prof. Lauren Christopher*)
Graduate Teaching Assistant *Aug 2018 - Dec 2018*

PROFESSIONAL SERVICES

Conference Reviewer at CVPR 2023-2025, ICCV 2023, ECCV 2024, NeurIPS 2024, AAAI 2025, ICLR 2025, WACV 2025, ICML 2025
Journal Reviewer for *IEEE Access*, *Multimedia Tools and Applications*, *IEEE Transactions on Circuits and Systems for Video Technology*
Student Member at Institute of Electrical and Electronics Engineers

INVITED TALKS

SPARTAN: Self-supervised Spatiotemporal Transformers Approach to Group Activity Recognition, *IEEE/CVF CVPR Workshop - CVSports June 2023*