

Ragib Arnab

U.S. Citizen

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Research Interests

Interested in researching AI that is more efficient and robust while requiring little supervision.

Areas of interest: self-supervised learning, video understanding, energy-based models, neuromorphic computing

Education

The University of Texas at Dallas – Bachelor of Science in Computer Science May 2024
Relevant Coursework: Machine Learning, Intelligent Systems GPA: 3.77

Experience

Post Bachelors Student, Information Sciences (CCS-3) Oct 2024 – Present
Los Alamos National Laboratory Los Alamos, NM

- Conducting research on spatio-temporal learning to develop foundational models for scientific computing
- Mentors: [Dr. Garrett Kenyon](#), [Dr. Michal Kucer](#)

Technical Intern, AI and Data Analytics May 2023 – Aug 2023
Pacific Northwest National Laboratory Seattle, WA

- Developed an object detection pipeline for aerial drones equipped with event cameras
- Mentor: [Dr. Yijing Watkins](#)

Undergraduate Student, Information Sciences (CCS-3) Jun 2022 – May 2023
Los Alamos National Laboratory Los Alamos, NM

- Applied sparse coding on the task of lidar depth completion for autonomous driving
- Mentor: [Dr. Garrett Kenyon](#)

Publications

- D. Hannan, **R. Arnab**, G. Parpart, G. Kenyon, E. Kim, and Y. Watkins, "Event-to-video conversion for overhead object detection," IEEE Southwest Symposium on Image Analysis and Interpretation (SSIAI) 2024. Available: <https://arxiv.org/abs/2402.06805>
- **R. Arnab**, G. Kenyon, "Sparse Coding for Depth Completion on Autonomous Vehicles [Slides]," 2022. Available: <https://doi.org/10.2172/1985006>

Projects

Nova, Applied Systems Lab at UT Dallas

- Worked as a software developer on an open-source self-driving project
- Developed lidar mapping, localization, and SLAM systems
- Integrated 3D object detection and tracking software
- Advisor: [Prof. Justin Ruths](#)

Visual SLAM

- Built a monocular visual SLAM system to map unknown environments using video footage
- Utilized OpenCV functions for visual odometry
- Applied g2o graph optimization library for bundle adjustment

Skills

Programming Python, C++, C, Java, MATLAB, SQL

Software PyTorch, NumPy, pandas, Matplotlib, OpenCV, g2o, ROS 2, Git, Linux, MySQL, AWS EC2/S3/RDS