

Arpita Chowdhury

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SUMMARY

My research focuses on **machine learning** and **computer vision**, with specific interests in **Transfer Learning**, **Multi-modal Learning**, **Explainable AI**. Application-wise, currently, I am working on improving **Few-shot Classification and Segmentation** for applications in medical imaging and wildlife.

EDUCATION

- **The Ohio State University** 2021 - 2027(Expected)
Ph.D. and M.S. in Computer Science and Engineering, Advisor: [Prof. Wei-Lun \(Harry\) Chao](#). Columbus, OH
- **University of Dhaka** 2015 - 2019
B.Sc. in Software Engineering Dhaka, Bangladesh

PUBLICATIONS

* DENOTES EQUAL CONTRIBUTIONS AND CO-FIRST AUTHORSHIP.

Conferences

- [C.1] **Arpita Chowdhury**, Dipanjyoti Paul, Zheda Mai, Jianyang Gu, Ziheng Zhang, Kazi Sajeed Mehrab, Elizabeth G Campolongo, Daniel Rubenstein, Charles V. Stewart, Anuj Karpatne, Tanya Berger-Wolf, Yu Su, Wei-Lun Chao. [PROMPT-CAM: Making Vision Transformers Interpretable for Fine-Grained Analysis](#). *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025.
- [C.2] Ziheng Zhang*, Jianyang Gu*, **Arpita Chowdhury**, Zheda Mai, David Carlyn, Tanya Berger-Wolf, Yu Su, Wei-Lun Chao, [Finer-CAM: Spotting the Difference Reveals Finer Details for Visual Explanation](#). *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025.
- [C.3] Zheda Mai*, **Arpita Chowdhury***, Ping Zhang*, Cheng-Hao Tu, Hong-You Chen, Vardaan Pahuja, Tanya Berger-Wolf, Song Gao, Charles Stewart, Yu Su, Wei-Lun Chao. [Fine-Tuning is Fine, if Calibrated](#). *In Proceedings of the Neural Information Processing Systems (NeurIPS)*, 2024.
- [C.4] Dipanjyoti Paul, **Arpita Chowdhury**, Xinqi Xiong, Feng-Ju Chang, David Carlyn, Samuel Stevens, Kaiya Provost, Anuj Karpatne, Bryan Carstens, Daniel Rubenstein, Charles Stewart, Tanya Berger-Wolf, Yu Su, Wei-Lun Chao, [A Simple Interpretable Transformer for Fine-Grained Image Classification and Analysis](#). *In Proceedings of International Conference on Learning Representations (ICLR)*, 2024.
- [C.5] Jihyung Kil*, Zheda Mai*, Justin Lee, **Arpita Chowdhury**, Zihe Wang, Kerrie Cheng, Lemeng Wang, Ye Liu, Wei-Lun Chao. [CompBench: A Comparative Reasoning Benchmark for Multimodal LLMs](#). *In Proceedings of the Neural Information Processing Systems(NeurIPS)*, 2024

Under Review

- [U.3] Zhenyang Feng, Zihe Wang, Saul Ibaven Bueno, ... , **Arpita Chowdhury**, ... , Wei-Lun Chao. [Static Segmentation by Tracking: A Frustratingly Label-Efficient Approach to Fine-Grained Segmentation](#), 2024

INDUSTRY EXPERIENCE

- **Samsung Research and Development Institute** January 2019 - August 2019
Backend Software Engineer, Full-time Dhaka, Bangladesh
 - Led the deployment, and maintenance of robust databases using Node.js and SQL, across multiple projects.
 - Partnered closely with front-end teams delivering demos to showcase project advancements.
- **Samsung Research and Development Institute** January 2018 - June 2018
Intern Software Engineer, Full-time Dhaka, Bangladesh
 - Engineered a secure, robust SQL Server database engine with Node.js.
 - Developed an Android P2P chat app featuring movement-based gesture detection.
- **Softcell Solution Limited** August 2016 - October 2016
Software Requirements Engineer, Part-time Dhaka, Bangladesh
 - Led weekly client meetings to ensure software requirements aligned with project goals.
 - Translated functional and data requirements into detailed data flow diagrams, class, and data models.

RESEARCH EMPLOYMENT

- **Computer Science & Engineering, The Ohio State University** *May 2023 - Present*
Graduate Research Assistant *Columbus, OH*
 - **The Ohio State University Medical Center**
 - * Working on developing 2D detection and segmentation models for pancreas neoplasia (medical imaging)
 - * Working on developing Few-shot Video Object Segmentation models to enhance early detection of pancreatic cancer (medical imaging)
 - **Imageomics Institute**
 - * Developed an algorithm to localize trait-specific regions in fine-grained classification.
 - * Working on models for trait tracking in fine-grained species classification. (wildlife)
 - * Working on language-guided models for fine-grained wildlife segmentation. (wildlife)

MENTORSHIP & TEACHING

- **Main Instructor, The Ohio State University** *Semester: Fall 2023*
 - CSE 2221: Software I: Software Components
- **Graduate Teaching Assistant, The Ohio State University** *Semester: Summer 2023*
 - CSE 2221: Software I: Software Components
- **Head Graduate Teaching Assistant, The Ohio State University** *Semester: Spring 2023*
 - CSE 2111: Modeling and Problem Solving with Spreadsheets and Databases
- **Graduate Teaching Assistant, The Ohio State University** *Semester: Fall 2021*
 - CSE 3341: Principles of Programming Languages

SKILLS

- **Programming Languages:** Python, C++, JavaScript, Bash Script, R
- **Machine Learning Tools:** PyTorch, Huggingface, NumPy, Pandas, SciPy, scikit-learn
- **Other Tools & Technologies:** Git, Docker, SQL, Node.js, Android Development

SERVICE

- **Conference Reviewer:** CVPR, ICCV, AAAI