Arpita Chowdhury

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Research Interest

My research focuses include: **Efficient Multimodal LLM**, **Foundation Model Adaptation** , **Explainable AI**

Education

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

Research Experience

- **Qualcomm** *June 2025 - August 2025*
  Research Internship, Full-time — San Diego, USA
  - Worked on multimodal reasoning and understanding in text-dense scenes.

Publications

* denotes equal contributions and co-first authorship.

Conferences

[C.1] **Arpita Chowdhury***, Zheda Mai*, Zihe Wang, Lemeng Wang, Sooyoung Jeon, Wei-Lun Chao. AVA-Bench: Atomic Visual Ability Benchmark for Vision Foundation Models, **CVPR, 2026**

[C.2] **Arpita Chowdhury***, Zheda Mai*, Ping Zhang*, Cheng-Hao Tu, Hong-You Chen, Tanya Berger-Wolf, Song Gao, Charles Steward, Yu Su, Wei-Lun Chao. Fine-Tuning is Fine, if Calibrated.**NeurIPS, 2024**.

[C.3] Dipanjyoti Paul, **Arpita Chowdhury**, Xinqi Xiong, Feng-Ju Chang, ... , Yu Su, Wei-Lun Chao, A Simple Interpretable Transformer for Fine-Grained Image Classification and Analysis. **ICLR, 2024**.

[C.4] 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.**NeurIPS, 2024**.

[C.5] **Arpita Chowdhury**, Dipanjyoti Paul, Zheda Mai, Jianyang Gu, Ziheng Zhang,..., Yu Su, Wei-Lun Chao. PROMPT-CAM: Making Vision Transformers Interpretable for Fine-Grained Analysis.**CVPR, 2025**.

[C.6] 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. **CVPR, 2025**.

[C.7] Ziheng Zhang, Xinyue Ma, **Arpita Chowdhury**, ... , Tanya Berger-Wolf, Yu Su, Wei-Lun Chao, Jianyang Gu. BioCAP: Exploiting Synthetic Captions Beyond Labels in Biological Foundation Models, **ICLR, 2026**.

Journal[peer-reviewed]

[J.1] Ahmed Abdelbaki, Ziwei Li, Tai-Yu Pan, Justin Lee, **Arpita Chowdhury**, ..., Wei-Lun Chao, Somashekar G. Krishna. Artificial Intelligence Advances Digital Pathomics for Confocal Endomicroscopy Diagnosis of Pancreatic Cysts., Techniques and Innovations in Gastrointestinal Endoscopy, 2025.

[J.2] Intracystic capillary morphology as a novel approach to risk stratification of IPMNs in confocal endomicrosopy, Gastroenterology, 2025.

Workshop

[W.1] Zhenyang Feng, Zihe Wang, ... , **Arpita Chowdhury**, ... , Wei-Lun Chao. Static Segmentation by Tracking: A Frustratingly Label-Efficient Approach to Fine-Grained Segmentation, **CVPR workshops**, 2025

[W.2] Sooyoung Jeon , Zheda Mai, Hongjie Tian, ..., Ping Zhang, **Arpita Chowdhury**, Wei-Lun Chao. Continually Adapt or Not (CAN)? A Continual Learning Benchmark of Camera Trap Species Classification over Time, **NeurIPS workshops**, 2025

Under Review

[U.1] **Arpita Chowdhury**, Hyojin Park, Hoang Le, Wei-Lun Chao, Munawar Hayat, Fatih Porikli, Shweta Mahajan. READ THE OBJECT: A Task for Text-Grounded Object Understanding in Real-World Images, 2026

[U.2] Dipanjyoti Paul,**Arpita Chowdhury**, Ziheng Zhang, Daichi Kitaguchi, Tanya Berger-Wolf, Tetsuya Sakurai, Wei-Lun Chao. INTR-AI: INterpretable TRansformers Reconciling Accuracy and Interpretability, 2026

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
    - Worked on developing 2D detection and segmentation models for pancreas neoplasia (medical imaging)
    - Worked 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.
    - Worked on models for fine-grained trait tracking through image segmentation. (wildlife)
    - Working on multimodal-based models to ground species traits in an image with natural language and trait ontology. (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, 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'25,26, ICCV'25, ECCV'26, AAAI'24, NeurIPS'25, WACV'25, ICLR'25,26
- **Volunteer Judge and mentor:** OSU Artificial Intelligence Hackathon: 2023, 2024
- **Area Chair:** NeurIPS Imageomics Workshop 2025