

XAVIER THOMAS

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EDUCATION

Boston University

Master of Science in Artificial Intelligence (Thesis Track)

Sep 2023 - May 2025

Advisor: [Prof. Deepti Ghadiyaram](#)

Manipal Institute of Technology

Bachelor of Technology in Electronics and Instrumentation, Minor in Computational Intelligence

Jul 2018 – Aug 2022

RESEARCH & WORK EXPERIENCE

Boston University

Jun 2024 - Present

Graduate Research Assistant | Advisors: [Prof. Deepti Ghadiyaram](#), [Prof. Thomas Gardos](#)

- **Edubotics AI:** Created and maintaining an **open-source Python package** for creating customized, research-backed LLM-based applications; built and deployed a prototype digital teaching assistant for Boston University courses. (50+ users) [🔗 Code](#) | [📦 PyPI](#)
- **MS Thesis:** Investigating **Vision-Language Models (VLMs)**, and developing improved visual feature representations. Currently exploring the integration of diffusion model features to improve VLM performance.

ShareChat

Jul 2022 - Jun 2023

Machine Learning Engineer Intern | Content and User Understanding Team

- Integrated an **advanced computer vision pipeline** into **production**, improving both content classification and moderation capabilities on ShareChat (180M+ MAUs) and Moj (160M+ MAUs).
- Designed **MAViC, a Multimodal Active Learning algorithm for Video Captioning** that reduces annotation effort by integrating semantic similarity and uncertainty from visual and language modalities. Achieved **96%** of CIDEr on MSR-VTT and **79%** of CIDEr on MSVD using **only 25% of the training data**, compared to the full-data performance. [📄 Paper](#)
- Developed an **AI-powered content creation tool** for seeding content, and engineered an **Automated News Dashboard** to compile daily news into genre-specific video snippets, improving engagement and retention.
- Integrated **Natasha, an AI assistant**, into ShareChat's messaging service, leading to increased user engagement.

Searce Inc

Jan 2022 - Jul 2022

Machine Learning Engineer Intern

- Developed a voice-activated chatbot to automate IT helpdesk tasks like user verification, account unlocking, and password resets.
- **Led technical development** and facilitated client discussions, collaborating with a team of 3 engineers.

Serre Lab, Brown University

Sep 2021 - May 2022

Research Intern | Advisors: [Prof. Thomas Serre](#), [Dr. Victor Boutin](#)

- Designed a **novel framework for evaluating one-shot generative models** on recognizability and diversity, enabling systematic comparisons on the Omniglot dataset, and providing new insights into model performance across 4 representative architectures.
- Applied this framework to benchmark representative generative models against human performance. [🔗 Code](#) | [📄 Paper](#)

Massachusetts Institute of Technology

Jan 2021 - Nov 2022

Research Assistant | Advisors: [Dr. Abhimanyu Dubey](#)

- Created a **novel algorithm to recover domain information** by removing class-specific noise from features, enabling the development of **privacy-preserving, domain-adaptive classifiers** without requiring any domain labels for training data.
- Achieved **state-of-the-art performance**, outperforming existing methods that do not utilize domain labels. [🔗 Code](#) | [📄 Paper](#)

PUBLICATIONS, PREPRINTS, AND WORKING PAPERS

MAViC: Multimodal Active Learning for Video Captioning

Gyanendra Das, **Xavier Thomas**, Anant Raj, Vikram Gupta | [📄 Paper](#)

Diversity vs. Recognizability: Human-like generalization in one-shot generative models (**NeurIPS**, 2022)

Victor Boutin, Lakshya Singhal, **Xavier Thomas**, Thomas Serre | [🔗 Code](#) | [📄 Paper](#)

Adaptive Methods for Aggregated Domain Generalization

Xavier Thomas, Dhruv Mahajan, Alex Pentland, Abhimanyu Dubey | [🔗 Code](#) | [📄 Paper](#)

SKILLS

Languages: Python, MATLAB, C++, SQL, HTML/CSS, TypeScript

Tools & Technologies: Node.js, SQLite, Redis, Streamlit, Django, **FastAPI**, **Chainlit**, **LangChain**, **Hugging Face**

Transformers, NumPy, **PyTorch**, Accelerate, Docker, Kubernetes, Jenkins, Spinnaker, Google Cloud, Git, Jira, gRPC, Open MPI