

XAVIER THOMAS

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EDUCATION

Boston University

Master of Science in Artificial Intelligence

2023 - 2025

Manipal Institute of Technology

Bachelor of Technology in Electronics and Instrumentation

Advisor: Prof. Deepti Ghadiyaram

July 2018 – Aug 2022

RESEARCH & WORK EXPERIENCE

Boston University

Jan 2024 - Present

Research Assistant | Advisors: Prof. Deepti Ghadiyaram, Prof. Thomas Gardos

- **MS Thesis:** Investigating **Vision-Language Models (VLMs)** and developing improved visual feature representation methods. Additionally, exploring diffusion model features to enhance VLM performance in downstream tasks.
- **Edubotics AI:** Created and maintaining an open-source Python package for building customized research-backed LLM-based chatbots, deployed as an AI-driven digital teaching assistant in Boston University courses. [🔗 Code](#) | [📦 PyPI package](#)

ShareChat

July 2022 - June 2023

Machine Learning Engineer Intern / Content and User Understanding Team

- Integrated an **advanced computer vision pipeline** into **production**, significantly enhancing content classification accuracy and platform safety for ShareChat (180M+ MAUs) and Moj (160M+ MAUs).
- Developed an **AI-powered content creation tool**, used to seed content in ShareChat's platforms.
- Engineered an **Automated News Aggregation Dashboard** that compiles daily news into genre-specific video snippets, streamlining content delivery and resulting in a significant increase in user engagement and viewer retention.
- Launched "**Natasha**", an **AI assistant** within ShareChat's messaging service, significantly enhancing user engagement.
- Developed "**MAViC**", a **novel algorithm for Multimodal Active Learning**, optimizing data collection for video captioning models and significantly reducing annotation costs. [📄 Paper](#)

Seance Inc

Jan 2022 - July 2022

Machine Learning Engineer Intern

- Developed and deployed a chatbot to automate IT helpdesk tasks such as user verification, account unlocking, and password resets, resulting in enhanced operational efficiency and increased user satisfaction.
- **Led client meetings** to ensure project outcomes were aligned with client goals and expectations while serving as the **technical lead for a team of three**. Oversaw the development and deployment of the chatbot to production.

Serre Lab, Brown University

Sept 2021 - May 2022

Research Intern | Advisors: Prof. Thomas Serre, Dr. Victor Boutin

- Designed a **novel framework for evaluating one-shot generative models** based on sample recognizability and diversity, contributing to advancements in model evaluation methodologies.
- Conducted a systematic evaluation comparing model performance with human benchmarks using the Omniglot dataset, leading to a publication at **NeurIPS 2022**. [🔗 Code](#) | [📄 Paper](#)

Massachusetts Institute of Technology

Jan 2022 - July 2022

Research Assistant | Advisors: Dr. Abhimanyu Dubey

- Developed a **novel algorithm to recover domain information** by removing class-specific noise from features, enabling the learning of **privacy-preserving, domain-adaptive classifiers**. [🔗 Code](#) | [📄 Paper](#)
- Achieved substantial performance improvements on **domain generalization benchmarks**: PACS (+3.4%), VLCS (+2.5%), OfficeHome (+0.5%), DomainNet (+1.9%), and TerraIncognita (+1.7%).

PUBLICATIONS, PREPRINTS, AND WORKING PAPERS

MAViC: Multimodal Active Learning for Video Captioning

Gyanendra Das, **Xavier Thomas**, Anant Raj, Vikram Gupta

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

Victor Boutin, Lakshya Singhal, **Xavier Thomas**, Thomas Serre

Adaptive Methods for Aggregated Domain Generalization

Xavier Thomas, Dhruv Mahajan, Alex Pentland, Abhimanyu Dubey

LANGUAGES AND TOOLS

Python, **MATLAB**, **C++**, **SQL**, **HTML/CSS**, **TypeScript**, **Node.js**, **Streamlit**, **Django**, **FastAPI**, **Chainlit**, **LangChain**, **LangGraph**, **Hugging Face Transformers**, **PyTorch**, **NumPy**, **pandas**, **Accelerate**, **Docker**, **Kubernetes**, **Jenkins**, **Spinnaker**, **Google Cloud**, **Dialogflow ES**, **Google Cloud Functions**, **PostgreSQL**, **SQLite**, **Redis**, **Git**, **Jira**, **WebSocket**, **gRPC**, **Open MPI**