

# XAVIER THOMAS

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## EDUCATION

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### Manipal Institute of Technology, Karnataka, India

Bachelor of Technology

July 2018 – Aug 2022

CGPA: 8.39/10

Electronics and Instrumentation, (Minor in Computational Intelligence)

## PUBLICATIONS, PREPRINTS, AND WORKING PAPERS

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### 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

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

Neural Information Processing Systems (NeurIPS), 2022

### Adaptive Methods for Aggregated Domain Generalization

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

## RESEARCH EXPERIENCE AND INTERNSHIPS

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### ShareChat

July 2022 – Present

Machine Learning Engineer Intern | Advisors: [Vikram Gupta](#), [Dr. Hisham Cholakkal](#), [Dr. Anant Raj](#)

Remote

- Working on topics related to Few-shot Learning, Multimodal Learning and Active Learning with the Content and User Understanding Team at ShareChat.

### Serre Lab, Brown University

Sept 2021 – May 2022

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

Remote

- Worked on a project to create a new framework to evaluate one-shot generative models along two axes: sample recognizability vs. diversity (intra-class variability).
- Using this framework, conducted a systematic evaluation of representative one-shot generative models (VAE, Neural Statistician, Data Augmentation GAN) on the Omniglot handwritten dataset.
- [Code](#) | [Paper](#)

### Massachusetts Institute of Technology

Jan 2021 – Nov 2021

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

Remote

- Worked on an algorithm that recovers domain information in an unsupervised manner, by carefully removing class-specific noise from features, which is used to learn a domain-adaptive classifier.
- The algorithm takes a two step approach: (a) cluster training data within a carefully chosen feature space to create pseudo-domains, (b) using these pseudo-domains learn a domain-adaptive classifier.
- This methodology has obtained better performance in standard domain generalization datasets such as PACS (+3.4%), VLCS (+2.5%), OfficeHome (+0.5%), DomainNet (+1.9%), and TerraIncognita (+1.7%) etc, compared to ERM.
- [Code](#) | [Paper](#)

### For.ai (now Cohere For AI)

Oct 2020 – Aug 2021

Research Team Member (part-time) | Advisor: [Sicong Huang](#)

Remote

- [For.ai](#) is a multi-disciplinary team of scientists and engineers involved in Machine Learning research. Published experiments and tools can be found at [github.com/for-ai](https://github.com/for-ai)
- Worked on an Out-of-Distribution Detection Benchmarking Project that aims to provide a flexible framework for further experiments and benchmarking across different datasets and models.
- Implemented the GLOW model and contributed to the framework that was used in the study.

## INDUSTRIAL EXPERIENCE AND INTERNSHIPS

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### Searce Inc

Jan 2022 – July 2022

Machine Learning Engineer Intern | [Certificate](#)

Remote

- Machine Learning Engineer Intern with the Applied AI team as part of my 8th semester project work.
- Developed a Dialogflow ES Chatbot to automate the internal IT helpdesk of a client that handles a variety of use cases.
- Tech Stack: Google Dialogflow ES, Google Cloud Functions, Node.js

## TECHNICAL STRENGTHS

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- **Programming:** Python, MATLAB, C++ , C
- **Machine Learning:** Pytorch, Tensorflow, Numpy, Pandas, scikit-learn, OpenCV, Faiss

## EXTRACURRICULAR

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- The MIT Post - Staff Writer - Sep 2019 - Jan 2020.
- Contributor - FanSided - May 2019 - Dec 2019
- PyData Manipal - Core Committee member of PyData's Local Chapter at Manipal. Organized a Git workshop and helped undergraduate students make their first pull request.

## OTHER ACHIEVEMENTS

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- First place in the event Enigma (a 3-day Machine Learning Competition) hosted by IECSE, Manipal | [Certificate](#)
- Selected as a recipient of the Mitacs Globalink Research Internship program | [Award Letter](#)