

## WORK EXPERIENCE

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- Machine Learning Scientist** Dec 2023 - Present
  - Applied Research Intern Jan 2023 - Dec 2023  
*Georgian Partners Remote, Canada*
  - Led applied AI projects on information extraction, lead classification, & RAG using LLMs and analytics projects on insurance ML models and 34M+ blockchain transactions.
  - Developed solutions for applied AI problems using fine-tuning, RAG, prompting, and text-to-SQL.
  - Developed and led tutorials on prompting, RAG, and RLHF for 36+ startups resulting in 7+ POCs.
  - Created a public repository containing guides & tutorials for LLM reasoning, retrieval-augmented generation (RAG), model alignment, image-to-text models and text-to-image (diffusion) models.
  - Benchmarked vector DBs for large datasets, and LLM performance for edge computing and information extraction.
  - Tech Stack:** Python, PyTorch, LangChain, Transformers, GCP, Git, LLMs (GPT, Mistral), Vector DBs
- Graduate Research Fellow** May 2021 - Dec 2022
  - University of Alberta Edmonton, Canada*
  - Research on AI for video games (computer vision, reinforcement learning) and debiasing language models (NLP).
- Machine Learning Engineer** Aug 2019 - Nov 2020
  - Mad Street Den (Vue.ai) Chennai, India*
  - Created a machine learning model to extract keywords from 37+ million retail products.
  - Developed & deployed solutions for classification & entity extraction problems using language models like BERT.
  - Boosted precision of a rule-based classification system by 15% using ML & reduced codebase latency by 40%.
  - Implemented Word2Vec across a dataset of 2+ million retail product descriptions.
  - Tech Stack:** Python, PyTorch, Tensorflow, Keras, Transformers, Django, Javascript, AWS, GCP, Git

## EDUCATION

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- University of Alberta** Jan. 2021 – Dec. 2022
  - Master of Science (Thesis) in Computing Science; CGPA: 3.75/4.0 Edmonton, Canada*
  - Thesis:** Visualizing Characters and Evaluating their Balance in Competitive Video Games.
- Anna University (Sri Venkateswara College of Engineering)** Jun. 2015 – Apr. 2019
  - Bachelor of Engineering in Computer Science and Engineering; First Class. Chennai, India*
  - Thesis:** Natural Language Generation using Generative Adversarial Networks (Awarded grant of INR 10,000)

## SKILLS

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- Languages & Databases:** Python, MySQL, SQLite, MongoDB, Vector Databases (QDrant, LanceDB), Markdown
- Frameworks & Libraries:** PyTorch, Tensorflow, Keras, Transformers, LangChain, NumPy, Pandas, scikit-learn
- Tools & Technologies:** Git, LaTeX, AWS (Sagemaker, EC2, S3, Redis) GCP (VertexAI, Compute Engine)

## PUBLICATIONS

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- A Framework for Predicting the Impact of Game Balance Changes through Meta Discovery:** First author. Under review.
- FineDeb: A Debiasing Framework for Language Models:** Co-first author. AI4SG Workshop, AAI 2023.
- Pixel VQ-VAEs for Improved Pixel Art Representation:** First author. EXAG Workshop, AIIDE 2022.
- Facial Emotion Recognition using Convolutional Neural Networks:** First author. AICV 2018.

## PROJECTS & OPEN SOURCE WORK

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- [Open Source] Multimodal Toolkit:** Primary maintainer. Refactored codebase, added tests, resolved 30+ issues.
- Homebrew Helper:** Developed & deployed a Discord bot with database connectivity for online role-playing games.
- [Open Source] poke-env:** Identified & fixed several bugs, added example code.