

WORK EXPERIENCE

- **Applied Research Intern** Jan 2023 - Present
Georgian Partners Toronto, Canada
 - Led applied sessions on prompt engineering and RLHF for a Generative AI Bootcamp attended by 22 startups.
 - Created notebooks to showcase prompt engineering and RLHF using OpenAI, PaLM and HuggingFace APIs.
 - Led applied research on analyzing 34M blockchain transactions using graph ML and analytical techniques.
 - Refactored a two year old multi-modal machine learning toolkit to support newer versions of libraries.
 - **Tech Stack:** Python, PyTorch, LangChain, Transformers, Pytorch Geometric, GCP, Git
- **Graduate Research Fellow** May 2021 - Dec 2022
University of Alberta Edmonton, Canada
 - **Meta Discovery for Game Balance:** Designed a reinforcement learning system for automated playtesting.
 - **Debiasing Language Models:** Developed a framework, as a team of 3, to debias transformer models (BERT).
 - **Pixel VQ-VAE:** Introduced a novel model to learn pixel art embeddings for image generation & transformation.
 - **Tech Stack:** Python, PyTorch, Tensorflow, Transformers, Git
- **Machine Learning Engineer** Aug 2019 - Nov 2020
Mad Street Den (Vue.ai) Chennai, India
 - Trained language models (BERT, XLNet, USE) for classification and entity extraction.
 - Created an end-to-end config-driven framework for rapid prototyping of production-ready NLP models.
 - Upgraded existing systems using ML to boost precision by 15% & optimized the codebase to reduce latency by 40%.
 - Developed an experimental Sequence-to-Sequence model to generate retail product descriptions.
 - Extracted keywords from 37 million retail products using a custom algorithm that combined NPMI and TF-IDF.
 - Implemented Word2Vec across a dataset of 2 million retail product descriptions.
 - **Tech Stack:** Python, PyTorch, Tensorflow, Keras, Transformers, Django, Javascript, AWS, GCP, Git

EDUCATION

- **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)

PROGRAMMING SKILLS

- **Languages & Databases:** Python, MySQL, SQLite, MongoDB, HTML, CSS, Javascript, Markdown
- **Frameworks & Libraries:** PyTorch, Tensorflow, Keras, Transformers, LangChain, NumPy, Pandas, scikit-learn.
- **Tools & Technologies:** Git, LaTeX, Amazon Web Services (AWS), Google Cloud Platform (GCP)

PUBLICATIONS

- **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, AAAI 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.

SELECTED PROJECTS

- **Homebrew Helper:** Developed & deployed a Discord bot with database connectivity for online role-playing games.
- **[Open Source] Multimodal Toolkit:** Updated 2-year old codebase, added tests, resolved bugs & 10+ issues.
- **[Open Source] poke-env:** Identified & fixed several bugs, added example code.