

WORK EXPERIENCE

- **Applied Research Scientist** Jan 2023 - Present
Georgian Partners
 - Utilized graph-based machine learning techniques for applied research projects.
 - Upgraded a two year old multimodal machine learning toolkit to support latest libraries.
 - Developed a framework to preprocess & combine different text-to-speech (TTS) datasets.
 - **Tech Stack:** Python, PyTorch, Pytorch Geometric, Transformers, GCP, Git
- **Graduate Research Fellow** May 2021 - Dec 2022
University of Alberta
 - **Meta Discovery for Game Balance:** Designed a reinforcement learning system to evaluate game balance.
 - **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)
 - Trained Transformer models (BERT, XLNet) for classification, entity extraction and language modeling problems.
 - 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.
 - **Tech Stack:** Python, PyTorch, Tensorflow, Keras, Transformers, Django, Javascript, AWS, GCP, Git
- **Engineering Intern** May 2019 - Aug 2019
Mad Street Den (Vue.ai)
 - Extracted keywords from 37 million retail products using a custom algorithm that combined NPMI and TF-IDF.
 - Implemented Word2Vec over 2 million retail product descriptions.
 - **Tech Stack:** Python, PyTorch, scikit-learn, AWS

EDUCATION

- **University of Alberta** Jan. 2021 – Dec. 2022
Master of Science (Thesis) in Computing Science; CGPA: 3.75/4.0
 - **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.
 - **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, C, C++.
- **Frameworks & Libraries:** PyTorch, Tensorflow, Keras, Transformers (HuggingFace), NumPy, Pandas, scikit-learn.
- **Tools & Technologies:** Git, LaTeX, Amazon Web Services (AWS), Google Cloud Platform (GCP)

PUBLICATIONS

- **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.

SELECTED PROJECTS

- **Homebrew Helper:** Developed & deployed a Discord bot for online role-playing games with database connectivity.
- **[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.