

WORK EXPERIENCE

- **Graduate Research Assistantship Fellowship (GRAF)** May 2021 - Present
Supervisor: Dr. Matthew Guzdial, University of Alberta *Edmonton, Canada*
 - **Meta Discovery for Video Game Character Balance:** Developing a reinforcement learning-based system to balance new video game characters through identification and analysis of the competitive meta-game.
 - **Pixel Art Representation:** Developed the Pixel VQ-VAE, a computer vision model for learning pixel art embeddings. Further demonstrated its effectiveness in image generation & transformation.
- **Machine Learning Engineer** Aug 2019 - Nov 2020
Mad Street Den (Vue.ai) *Chennai, India*
 - **MVP Team:** Developed new machine learning products using natural language processing (NLP) and computer vision (CV). Created an end-to-end proof-of-concept of the company's tagging capabilities on retail items. Developed a general purpose, config-driven framework for creating production-ready classification and NER models that allowed for rapid prototyping.
 - **VueTag Team:** Ideated, developed and deployed models on AWS and GCP. Upgraded existing rule-based classification engines with machine learning algorithms to boost key metrics by 15%. Optimized the codebase to reduce latency by over 40% across the board.
 - **Research & Development Team:** Developed a Sequence-to-Sequence model for automated generation of product descriptions. Created a Named Entity Recognition system to identify key tags in new client catalog data using transformer models.
 - **Tech Stack:** Python, PyTorch, Tensorflow, Keras, AWS, GCP, Javascript
- **Engineering Intern** May 2019 - Aug 2019
Mad Street Den (Vue.ai) *Chennai, India*
 - **Research & Development Team:** Developed and implemented customized versions of Pointwise Mutual Information (NPMI) and TF-IDF to identify and extract important keywords across different categories and clients over 37 million retail products. Implemented Word2Vec on a catalog of 2 million products.
 - **Tech Stack:** Python, PyTorch, AWS

EDUCATION

- **University of Alberta** Jan. 2021 – Dec. 2022 (Expected)
Master of Science (Thesis) in Computing Science *Edmonton, Canada*
- **Anna University (Sri Venkateswara College of Engineering)** Jun. 2015 – Apr. 2019
Bachelor of Engineering in Computer Science and Engineering; First Class. *Chennai, India*

PROGRAMMING SKILLS

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

PUBLICATIONS

- **Pixel VQ-VAEs for Improved Pixel Art Representation:** Akash Saravanan & Matthew Guzdial. EXAG 2022.
- **FineDeb: A Debiased Finetuning Approach for Language Models:** Akash Saravanan, Dhruv Mullick, Habibur Rahman, & Nidhi Hegde. Under review (AACL 2022).
- **Natural Language Generation using Generative Adversarial Networks:** Akash Saravanan, Akhil Menon, & Gurudutt Perichetla. Undergraduate Thesis, Anna University. Intra-Mural Funding Grant (Rs. 10,000). April 2019.
- **Facial Emotion Recognition using Convolutional Neural Networks:** Akash Saravanan, Gurudutt Perichetla, & Dr. K. S. Gayathri. 1st International Symposium on Artificial Intelligence & Computer Vision, September 2018.

SELECTED PROJECTS

- **Homebrew Helper:** Developed & deployed a Discord bot for online role-playing games. (Python, MongoDB)
- **Whatsapp Message Analyzer:** Analyzes WhatsApp group chats and generates interesting statistics. (Python)