linkedin.com/in/akashsara/
akashsara.github.io/

Akash Saravanan

akashsara@outlook.com
+1 587-936-6416

Work Experience

- **Applied Research Intern** — Jan 2023 - Present
  Georgian Partners — *Remote, Canada*
  - 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.
  - Led applied research projects on information extraction using LLMs & blockchain transaction graph analytics.
  - Developed solutions for several applied research problems including prompt engineering for text-to-SQL, edge computing for LLMs, & a data pre-processing pipeline for speech-to-text synthesis.
  - Led hands-on sessions on prompt engineering and RLHF for a GenAI Bootcamp attended by 21 startups.
  - **Tech Stack:** Python, PyTorch, LangChain, Transformers,GCP, Git, LLMs (GPT-3.5/4, LLaMa 2, Falcon, PaLM)
- **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*
  - Developed ML solutions for classification & entity extraction problems using language models (BERT, XLNet).
  - Boosted precision of a rule-based classification system by 15% using ML & reduced codebase latency by 40%.
  - Created an end-to-end config-driven framework for rapid prototyping of production-ready NLP models.
  - 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, AWS (Sagemaker, EC2, S3, Redis) GCP (VertexAI, Compute Engine)

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.