Akash Saravanan
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Work Experience

- **Graduate Teaching Assistant** — Jan 2022 - Present
  University of Alberta — *Edmonton, Canada*
  - **Game AI**: Duties included grading quizzes, resolving doubts and weekly office hours.
- **Graduate Research Assistantship Fellowship (GRAF)** — May 2021 - Present
  Supervisor: Dr. Matthew Guzdial, University of Alberta — *Edmonton, Canada*
  - **Meta Discovery for Character Balance**: Working on a system to generate balanced new characters by identifying and studying the metagame in video games.
  - **Pixel Art Representation**: Developed a novel approach to learn pixel art embeddings using neural networks.
- **Machine Learning Engineer** — Aug 2019 - Nov 2020
  Mad Street Den (Vue.ai) — *Chennai, India*
  - **MVP Team**: Developed new products using machine learning techniques including natural language processing and computer vision as part of a Minimum Viable Product team. Created an end-to-end proof-of-concept to demonstrate the company's tagging capabilities on any supported retail item.
  - **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.
  - **Tools & Technologies**: Python, Javascript, AWS, GCP, PyTorch, Tensorflow, Keras
- **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.

Education

- **University of Alberta** — Jan. 2021 – Present
  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, Javascript, HTML, CSS, C, C++, Markdown, MySQL, SQLite, Redis, MongoDB.
- **Frameworks & Libraries**: PyTorch, Tensorflow, Keras, NumPy, Pandas, scikit-learn, Flask, Django, Bootstrap.
- **Tools & Technlogies**: Git, LaTeX, Amazon Web Services (AWS), Google Cloud Platform (GCP), Adobe Photoshop.

Publications

- **Natural Language Generation using Generative Adversarial Networks**: Undergraduate Thesis, Anna University. Intra-Mural Funding Grant (Rs. 10,000). April 2019.
- **Facial Emotion Recognition using Convolutional Neural Networks**: 1st International Symposium on Artificial Intelligence & Computer Vision (AICV'18), September 2018.

Selected Projects

- **Homebrew Helper**: Developed & deployed a Discord bot for online role-playing games. (Python, MongoDB)
- **pH7**: Created a custom dataset & trained a CNN to achieve 87% accuracy for identifying food as part of our Smart India Hackathon 2019 project. Also developed the back-end & database. (Python, Keras, Flask, Scrapy, SQLite)
- **Whatsapp Message Analyzer**: Analyzes WhatsApp group chats and generates interesting statistics. (Python)
- **Reddit Comment Analysis Bot**: Designed & deployed a bot to analyze users and offer interesting facts. (Python)