Akash Saravanan

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Education

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

Research Experience

- **Graduate Research Assistantship Fellowship (GRAF)** — Edmonton, Canada
  Under the supervision of Dr. Matthew Guzdial. — *May 2021 - Present*
  - **Summary**: Working on computational creativity using machine learning models in the video game domain.
- **Natural Language Generation using Generative Adversarial Networks** — Chennai, India
  Undergraduate Thesis — *Dec 2018 - Apr 2019*
  - **Intra-Mural Funding**: Only proposal granted intra-mural funding (Rs. 10,000) out of 90+ groups.

Work Experience

- **Mad Street Den (Vue.ai)** — Chennai, India
  Machine Learning Engineer — *Aug 2019 - Nov 2020*
  - **Tools & Technologies**: Python, Javascript, AWS, GCP, PyTorch, Tensorflow
  - **MVP Team**: Developed new products using natural language processing, traditional machine learning, and large-scale transformer-based models 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**: Upgraded the existing rule-based product attribute classification engine with machine learning algorithms to boost all metrics by 15%. Optimized the codebase to reduce latency by over 40% across the board. Deployed models on AWS and GCP.
  - **Research & Development**: Developed a Sequence-to-Sequence model for automated generation of product descriptions. Created a Named Entity Recognition system using pretrained transformer model to identify key tags in new client catalog data.
- **Mad Street Den (Vue.ai)** — Chennai, India
  Engineering Intern — *May 2019 - Aug 2019*
  - **Research & Development**: Implemented the Word2Vec algorithm on a catalog of 2 million fashion retail products. Analyzed 37 million fashion retail products across 15 clients to identify and extract important keywords across different categories. Implemented Pointwise Mutual Information (NPMI) to identify n-grams and designed a modified TF-IDF algorithm that accounted for the different product types in a catalog.

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

- **Facial Emotion Recognition using Convolutional Neural Networks**: 1st International Symposium on Artificial Intelligence & Computer Vision (AICV'18), September 2018.

Selected Projects

- **pH7**: Built a dynamic social platform that provided gamified & personalized healthcare for our Smart India Hackathon 2019 project. Created a custom food dataset and achieved 87% accuracy on a CNN classification model. Developed the back-end and setup database access via an internal API. (Keras, Flask, Scrapy)
- **Whatsapp Message Analyzer**: Analyzes WhatsApp group chats to generate statistics and graphs on user activity, frequent words etc. (Python, Seaborn)
- **Reddit Comment Analysis Bot**: Designed a bot to analyze a user's comment history and provide facts and graphs about their activity. (Python, PRAW, MatPlotLib)