

EDUCATION

- **Anna University (Sri Venkateswara College of Engineering)** Chennai, India
Bachelor of Engineering in Computer Science and Engineering; First Class. Jun. 2015 – Apr. 2019
 - **Relevant Coursework:** Artificial Intelligence, Information Retrieval, Design and Analysis of Algorithms, Graph Theory and Applications, Discrete Math, Transforms and Partial Differential Equations, Probability and Queuing Theory.

RESEARCH EXPERIENCE

- **Natural Language Generation using Generative Adversarial Networks** Chennai, India
Undergraduate Thesis Dec 2018 - Apr 2019
 - **Intra-Mural Funding:** Our proposal was the only one granted intra-mural funding of Rs. 10,000 from nearly 90 teams in the department.
 - **Summary:** Performed a comparative study of existing text generation methodologies. Established a baseline performance by allowing the network to write short paragraphs after independently training each model on (1) "Alice in Wonderland" and (2) "The Adventures of Sherlock Holmes". Developed a Generative Adversarial Network (GAN) using an LSTM generator and a fully connected discriminator. While the network generated coherent sentences, sequence models and transformers retained the best performance.
- **Facial Emotion Recognition using Convolutional Neural Networks** Chennai, India
1st International Symposium on Artificial Intelligence & Computer Vision (AICV'18) Feb 2018 - May 2018
 - **Single Blind Peer Review:** Presented on 28th September 2018. Published in the conference proceedings.
 - **Summary:** State-of-the-Art models utilized large datasets with large models & complex architectures. We proposed a new CNN model that utilized a simple architecture & a small dataset to achieve near State-of-the-Art accuracy (0.60) on the FER-2013 dataset.

WORK EXPERIENCE

- **Mad Street Den (Vue.ai)** Chennai, India
Machine Learning Engineer Aug 2019 - Present
 - **MVP Team:** Developing new products using natural language processing, traditional machine learning, and large-scale transformer-based models as part of a Minimum Viable Product team.
 - **End-to-End Proof-of-Concept:** Developed an end-to-end proof-of-concept of our tagging capabilities using both image and text data. Trained, tested and deployed the models. Scraped a new corpus of data to use as a test set.
 - **Product Attribute Classification:** Worked on rule-based product attribute classification engine. Deployed systems on Amazon Web Services (AWS) & Google Cloud Provider (GCP). Optimized the codebase to reduce latency by 10% - 60% across the board. Introduced new features including machine learning algorithms to complement the engine and boost the performance by over 15%.
 - **Named Entity Recognition:** Created a Named Entity Recognition system using a pre-trained BERT model to identify key entities in new client catalog data. Manually annotated 2,000 products to form a training and testing dataset. Achieved an F-Score of 0.95+ for each entity.
 - **Text Generation:** Developed a Sequence-to-Sequence (Seq2Seq) model for automated generation of product descriptions. Utilized LSTM layers for both the encoder and the decoder. Trained custom word embeddings on a large corpus to represent input data for the model.
- **Mad Street Den (Vue.ai)** Chennai, India
Engineering Intern May 2019 - Aug 2019
 - **Word Embeddings:** Implemented the Word2Vec algorithm on a catalog of 2 million fashion retail products for use in text generation, named entity recognition and classification tasks.
 - **Keyword Extraction:** Analyzed 37 million fashion retail products across 15 clients to extract important keywords per product type. Implemented Normalized Pointwise Mutual Information (NPMI) to identify bigrams and designed a modified TF-IDF algorithm that accounted for the different product types in a catalog.
- **CPC Diagnostics Pvt. Ltd.** Chennai, India
Software Development Intern - Python Nov 2017 - Jan 2018

- **Patient Management System:** Automated the paper-based patient management system by developing an end-to-end system. Used Python to remotely interface with medical instruments, retrieve data and map it to existing patients within a SQLite Database.
- **Report Generation:** Developed an analytical tool to automatically process test data, identify abnormal parameters create graphs, & generate a hematology report for use by medical professionals.

PROJECTS

- **PokéGAN:** An exploratory project into Generative Adversarial Networks (GANs) for generating new Pokémon using data from the Pokémon video games. (PyTorch)
- **pH7:** Collaborated with a team of 6 to build 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)
- **Conway's Game of Life:** Implemented a fully functional cellular automaton, The Game of Life. (Python)
- **Unbeatable Tic Tac Toe:** Developed using the Minimax algorithm. (Javascript, HTML, CSS)

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 & Technologies:** Git, LaTeX, Amazon Web Services (AWS), Google Cloud Platform (GCP), Adobe Photoshop.

CERTIFICATIONS

- **DeepLearning.ai** *Oct 2019*
Coursera Five Course Specialization on Deep Learning.
 - Neural Networks and Deep Learning
 - Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
 - Structuring Machine Learning Projects
 - Convolutional Neural Networks
 - Sequence Models
 - **Selected Course Projects:** Object Detection, Neural Style Transfer for Art Generation, Face Recognition, Character-Level Name Generation, Sentiment Classification with Emoji, Neural Machine Translation.
- **FreeCodeCamp Front End Development Certification** *Apr 2017*
400 Hours of Coursework on HTML, CSS & Javascript.

ACADEMICS & PROFESSIONAL SERVICE

- **Peer Reviewer:** The Journal of Supercomputing, Springer Nature. *Dec 2018 - Present*
- **Speaker:** The Hitchhiker's Guide to Sequence Models - MAD Journal Club. *Jan 2020*
- **Mentor:** Yet Another Hackathon 2K19, Chennai, India. *Sep 2019*
- **Chairman:** Sri Venkateswara College of Engineering, ACM Student Chapter. *Jun 2018 - May 2019*
- **Seminar:** 'Welcome to CS! Now What?', Sri Venkateswara College of Engineering. *Feb 2019*
- **Review Panel:** The Knowledge Initiative: Project Presentation, Sri Venkateswara College of Engineering. *Dec 2018*
- **Seminar:** 'Data Privacy & Password Security: Best Practices', Sri Venkateswara College of Engineering. *Sep 2018*
- **Executive Member:** Sri Venkateswara College of Engineering, ACM Student Chapter. *Jun 2016 - May 2018*

HONORS & AWARDS

- **Finalist:** Smart India Hackathon 2019, Coimbatore, India, *Mar 2018*
- **Winner:** Hatch-a-thon 2017, Chennai, India *Mar 2017*

OTHER INTERESTS

Quizzing, Tabletop, Board, Card & Video Games (both playing & designing!), and Reading.