Sai Deepesh POKALA

Graduate Student at CentraleSupélec

https://saideepesh.github.io/

EDUCATION

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CentraleSupélec

Paris, France

Master of Science in Artificial Intelligence

Sep. 2019 - Present

• **Key Courses**: Machine Learning, Deep Learning, Optimization, Computer Vision, Big Data, Reinforcement Learning, Natural Language Processing

Indian Institute of Information Technology Design and Manufacturing

Chennai, India

Bachelor of Technology in Electronics and Communication Engineering; GPA: 8.37/10

Jul. 2015 - May 2019

Key Courses: Digital Signal Processing, Linear Algebra, Digital Image Processing,
 Data Structures and Algorithms, Discrete Mathematics, Graph Theory

Research Experience

INSERM Grenoble, France

Artificial Intelligence Research Intern

May 2020 - Oct 2020

- Worked on the development of an unsupervised Spiking Neural Network (SNN) with Spike-Timing Dependent Plasticity (STDP) for automatic classification of animal vocalizations.
- Encoded raw analog audio into discrete spike trains with 'time-to-first-spike' encoding.
- Implemented a Low-Threshold-Spiking (LTS) Neuron model to mimic the activity of biological neurons by introducing a temporal dimension to the activation of neurons.
- Implemented the **STDP** learning rule to enhance learning by updating the synaptic weights of the network.

INSERM

Grenoble, France

Research Intern

May 2018 - Oct. 2018

- Analyzed minipig vocalization data and attempted to cluster them in order to facilitate mapping with cortical activity; critical for the development of a Brain-Computer Interface (BCI).
- Coded functions to successfully implement clustering algorithms like PCA and t-SNE using MATLAB.
- o Techniques Used: Spectrogram Analysis, Principal Component Analysis, t-SNE

Projects

• Aspect-Based Sentiment Analysis

- Implemented a classifier using a dense Neural Network with **dropout** to predict aspect-based polarities of opinions in sentences (**positive**, **negative** and **neutral**) and achieved an accuracy of **0.85**.
- o Techniques Used: transformers (BERT), lemmatization, POS tagging

• Pedestrian Bounding Box Detection

- Used classical Computer Vision methods to detect pedestrians from 684 different frames of a video.
- **Techniques Used**: Gaussian Smoothing, Canny Edge Detection, Background Subtraction, Dilation, Opening and Contour Detection

• Eat Cheese - Deep Reinforcement Learning

- Built an agent that maximizes the amount of cheese it collects on a 10x10 grid in a give period of time.
- Compared the performances of two algorithms one implemented with a fully connected network and another with a Convolutional Neural Network (CNN).
- Techniques Used: Deep Q-Networks (DQN), Convolutional Neural Networks (CNN)

Programming Skills

- Languages: Python, C, C++, MATLAB
- Technologies: AWS, Hadoop, Spark
- Libraries: numpy, scipy, spacy, NLTK, scikit-learn, pandas, PyTorch, TensorFlow, Keras, PySpark

LANGUAGES

• English - Bilingual Proficiency (TOEFL iBT 104/120)

• Telugu - Native Language

• French - Intermediate Proficiency (A2 CEFR)

• Hindi - Bilingual Proficiency

ACADEMIC ACHIEVEMENTS

- Secured 976/1000 and was among the 'top 1 percent' of the Andhra Pradesh Board Examination 2015 in India. Was offered a science scholarship by the Board of Intermediate Education, AP.
- Was among the 'top 1 percent' of the 1.6 million students who took the prestigious and highly competitive JEE Main exam (2015) in India.