Sai Deepesh POKALA

Graduate Student at CentraleSupélec

Master of Science in Artificial Intelligence

https://saideepesh.github.io/

CentraleSupélec

EDUCATION

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Rue Joliot Curie, Gif-sur-Yvette Mobile: +33-66514-0358

Paris, France

Sep. 2019 - Present

Big Data, Reinforcement Learning, Natural Language Processing Indian Institute of Information Technology Design and Manufacturing

o Key Courses: Machine Learning, Deep Learning, Optimization, Computer Vision,

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

Chennai, India
Jul. 2015 – May 2019

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

RESEARCH EXPERIENCE

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

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.