AMAN PRIYANSHU

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Exploring Tech through the Lens of AI, Cyber Security and Research. I am deeply passionate about Deep Learning, Cyber Security and the Research bringing together these two vast fields. Exploring opportunities to learn and grow.

Areas of Interest Privacy Enabled Machine Learning, Deep Learning, Reinforcement Learning, Spiking Neural Networks and Cyber Security.

EDUCATION

Manipal Institute of Technology, Manipal   *July 2019 – Present*
B.Tech in Information Technology   CGPA: 8.39/10.00

POSITIONS OF RESPONSIBILITY

Manipal Institute of Technology   *Nov 2020 – Jan 2021*
Research Assistant

· Worked on a research project under professors Nisha P. Shetty and Balachandra Muniyal on privacy enabled machine learning to detect cyber bullying using federated learning.

Cryptonite Student Project   *June 2020 – Present*
Technical Head

· Technical Head of the Cyber Security Student Project of Manipal, Cryptonite. Participated in multiple CTF competitions, currently ranked as 25th in India on CTFtimes. Developed and led research projects on Federated Learning and Privacy Preserving Machine Learning.

The Research Society MIT   *Feb 2021 – Present*
AI Subsystem Division Member

· A member of the Research Society, an organization that focuses on the research in different fields, both interdisciplinary and otherwise. Aside from working on research projects, we also hold workshops, talks, breakout sessions, etc to spread awareness about research in different technical domains.

Oniria Pets   *Jan 2020 – Feb 2020*
Machine Learning and Web Crawling Intern

· Interned at Oniria pets as a Machine Learning and Web Crawling Developer for Data Extraction and Management. Employed BERT for precise feature extraction pertaining to hotel prices, billing systems, locations etc. on data scraped from Hotel Websites. Employed Selenium and Scrapy for extraction.

RESEARCH EXPERIENCE AND PUBLICATIONS

FedPandemic: A Cross-Device Federated Learning Approach Towards Elementary Prognosis of Diseases During a Pandemic   *May 2021*

· In this paper, we presented FedPandemic, a novel noise implementation algorithm integrated with cross-device Federated learning for Elementary symptom prognosis during a pandemic, taking COVID-19 as a case study. The paper was accepted in *Distributed and Private Machine Learning Workshop at ICLR (2021)* and in *ICLR 2021 Workshop on Machine Learning for Preventing and Combating Pandemics*.

Continual Distributed Learning for Crisis Management   *May 2021*

· Presented our paper on continual and distributed learning for Crisis Management, which employed model regularization to alleviate catastrophic forgetting and federated learning for distributed learning. We came runners up in the *Paper Presentation event at IEEE-SBM*.

Stance Classification with Improved Elementary Classifiers Using Lemmatization (Grand Challenge) *Sept 2020*

· Came Runners Up in the *IEEE BigMM Data Challenge*, we came up with a model for accurate classification of sensitive tweets for the #MeToo movement. We worked on a highly biased dataset by introducing concepts of under-sampling and lemmatization to improve performance of elementary classifiers. Allowing the model to operate and train under restricted resources.

RELEVANT PROJECTS

Voix *Apr 2021*

· A social-media platform for uplifting communities and promoting civic participation. Created and deployed a social media platform, which utilized machine learning and differential privacy to promote civic engagement while protecting user-privacy. We created a contextual-similarity based recommender system to promote positive reinforcement while still promoting healthy debates. The project won under *Community & Civic Engagement for UC Berkeley's CalHacks Hackathon*.

FedPAQ *Dec 2020*

· Created realistic simulations for the FedPAQ paper implementation. The analysis produced by my simulations further supports the research presented within the paper and can act as supplementary implementation for the same.

Neural Embedding of Textual Data into Audio *Jul 2020*

· Created a Deep Learning based Neural Embedding Model for encoding Textual Data (Plain Text) and an Audio File (Method of Transfer) into a single Audio File (Cypher Text). The model is an encoder-decoder based generative model which produces an Audio reconstruction error of 0.12 (MAE) and Textual reconstruction error of 1e-6 with 100% reconstruction accuracy.

AWARDS AND HONOURS

- Winner under Community & Civic Engagement for UC Berkeley's CalHacks hackathon
- Runner-Up in Paper Presentation at IEEE-SBM
- IEEE BigMM Data Challenge Runner's Up
- Intel Edge AI Scholarship Recipient
- Qualified for Stanford's TreeHacks 2021
- OpenMined Course Completion - Passed all evaluation metrics

TECHNICAL STRENGTHS

Programming Languages/Frameworks	Python, Julia, Java, C++, Go, MongoDB, PyTorch, Tensorflow, keras, Flask, Django, Linux, Windows, Android
Languages	English, French

RELEVANT COURSEWORK

- Our Privacy Opportunity by OpenMined
- Deep Learning Specialization by deeplearning.ai
- TensorFlow in Practice Specialization by deeplearning.ai
- Introduction to Cyber Attacks by NYU