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ANSHUMAAN CHAUHAN

EDUCATION

Master's in science (MS)	**UMass Amherst**	**3.9/4.0**	Exp. Graduation: May 2024
Relevant Coursework: Algorithms for Data Science, Systems for Data Science, Machine Learning, Artificial Intelligence, Natural Language Processing, Neural Networks: Neuroscience and Engineering			
Bachelor's in engineering (B.E.)	**BITS Pilani Dubai Campus**	**9.83/10**	2018-2022

- Awarded merit scholarship of 64,640 AED on total fees based on my GPA.
- Awarded Bronze Medal for an outstanding academic performance and standing third amongst the batch of 2018.

Relevant Coursework: Machine Learning, Artificial Intelligence, Neural Networks & Fuzzy Logics, Probability and Statistics, Object Oriented Programming, Compiler Construction, Database Systems, Data Structures and Algorithms, Operating Systems, Computer Architecture, Computer Networks, Design and Analysis of Algorithms

PROFESSIONAL EXPERIENCE

Visiting Researcher
Florida Institute of Technology, United States
Jan 2022 – Jun 2022

- Natural Language Processing for Generating System Architecture
  - **Analyzed and extracted** the representation of the specifications in a subset of English language using Natural Language Processing (NLTK library) and **designed** a compiler for translating it to AADL.
  - **Published** in International Design Engineering Technical Conferences & Computers and Information in Engineering Conference 2022.
- Neural Architecture Search using Reinforcement Learning
  - **Proposed** an approach using Double Deep Q Networks for the automated generation of Convolutional Neural Network architectures. **Minimized** the scalability and time complexity problems without having effect on Search Space by implementing One Shot Training and Prioritized Experience Replay.

Summer Intern
TATA Communications, India
Jun 2020 – Aug 2020

- **Developed automated system** in Python using Flask, Urllib and requests libraries/frameworks, to improve the customer targeting and user experience based **on clicks per second and user heatmap on the website.**
- Performed **cross functional evaluation and strategy testing** along with a team of 5 developers and marketing analysts, to **increase the SEO rankings of the websites** while **reducing hosting costs and marketing spend by >14%**.

PROJECTS/PUBLICATIONS

Constraint-Based Multi-Organ Identification in CT Images using Unsupervised Learning (2022)

- **Proposed** an unsupervised learning approach using Density-Based Spatial Clustering of Applications with Noise (DBSCAN) for avoiding the large, labeled training dataset, expense of acquisition and data anonymization.
- **Implemented** knowledge-based framework to rule out infeasible segmentations. Proposed approach showcased Dice Coefficient values of 0.784 and 0.88 for kidneys and lungs respectively.
- **Accepted** in IEEE Nuclear Science Symposium, Medical Imaging Conference and RTSD Conference 2022.

LPRNet: A Novel Approach for Novelty Detection in Networking Packets (2021)

- **Implemented a** novel denoising autoencoder architecture for the task of novelty detection.
- **Integrated** affective optimizing algorithms and scaling techniques for faster and generalized learning.
- **Experiment** on dataset for different threshold values and achieved an accuracy of above 95%.
- **Published** in International Journal of Advanced Computer Science and Applications (IJACSA).

Performance analysis of Machine learning algorithms for Sentiment Analysis (2021)

- **Modeled** new datasets after applying different pre-processing steps such as Conversion to Lower case, replacing of special characters, Contraction of words, Removal of email id, etc.
- **Evaluated** and tested different machine learning models along with different feature extraction techniques and finally **concluded** that Linear Regression model when used with Bag-of-words and proper pre-processing steps shows the best results amongst all.
- **Published** in International Conference on Innovative Computing, Intelligent Communication and Smart Electrical systems (ICSES-2021).

Genetic algorithm aided Text classification (2020)

- **Improvised** the working of Support Vector Machines using genetic algorithm inspired from working of Reinforcement learning and incorporated it within an ensemble model to overcome the drawback of less accuracy score.
- **Put Forward an approach** which combines both genetic algorithm and ensemble learning approaches. **Proposed** approach shows an accuracy of 93.88%.
- **Published** in International Journal of Advanced Computer Science and Applications (IJACSA).

SKILLS

Programming Languages	Python, Java, SQL, HMTL, CSS, Matlab and C.
Frameworks/Technologies	PyCharm, VS Code, Wireshark, MySQL
ML Libraries	NumPy, Pandas, Scikit-learn, Keras, Tensorflow, Matplotlib, Seaborn