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AYUSHI AGARWAL

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EDUCATION

Arizona State University – Master of Science in Computer Science **August 2022 – Present**

- Courses: Fundamentals of Statistical Learning & Pattern Recognition, Data Mining, Topics in Natural Language Processing, Topics in Reinforcement Learning, Image Analytics and Informatics, Foundations of Algorithms. **CGPA: 4.0/4.0**

Birla Institute of Technology and Science, Pilani, Dubai Campus – Bachelor of Engineering in Computer Science **August 2018 – June 2022**

- Courses: Object Oriented Programming, Data Structure and Algorithms, Database Management Systems, Data Mining, Deep Learning, Machine Learning, Artificial Intelligence, Neural Networks & Fuzzy Logic. **CGPA: 9.62/10**

SKILLS AND TECHNOLOGIES

- Programming & Databases: Python, Java, MySQL, HTML, CSS, C, MATLAB
- Frameworks & Tools: FIJI/ImageJ, Microsoft Office, Wireshark, Jupyter Notebook, NumPy, Scikit-learn, Adobe Photoshop

WORK EXPERIENCE

Graduate Teaching & Graduate Services Assistant | Arizona State University, Tempe **January 2023 - Present**

- Preparing and grading weekly assignments for CSE 205: 'Object-Oriented Programming and Data Structures'.
- Assisting students with their inquiries during office hours.
- Monitoring students during examinations and ensuring the integrity of the test-taking environment.

Research Scholar | Arizona State University, Tempe **August 2022 - Present**

- Researched and analyzed the drawback of performance drop in online deployed Machine Learning models under Dr. Paulo Shakarian.
- Conceptualizing and engineering a novel software framework to resolve the currently existing issues.
- Measure and review the performance of the proposed framework on Agriculture Robotic Systems and Chest X-ray dataset.

Graduate Teaching Assistant | Arizona State University, Tempe **August 2022 – December 2022**

- Guided students in the weekly lab sessions for CSE 110: 'Principles of Programming with Java'.
- Assisted students with their inquiries during office hours.

Visiting Researcher | Florida Institute of Technology, Melbourne **January 2022 – June 2022**

- Assessed issues related to Organ Classification and Localization in whole-body CT Images (Bio-medical Processing Lab under Dr. Debasis Mitra).
- Implemented DBSCAN (unsupervised learning model) with a custom-designed knowledgebase system for segmentation of Lungs and Kidneys.
- Dice Coefficient values of 0.784 and 0.88 were achieved when tested for Kidneys and Lungs respectively.
- Accepted in 2022 IEEE Nuclear Science Symposium, Medical Imaging Conference and RTSD Conference.

IT Intern | TATA Communications, Pune **June 2020 – August 2020**

- Developed a Bot Management System to prevent the website from malicious activities.
- Integrated the system with the Nginx server to regularly update the list of blacklisted IP addresses.

PROJECTS AND PUBLICATIONS

LPRNet: A Novel Approach for Novelty Detection in Networking Packets | International Journal of Advanced Computer Science and Application (IJACSA)

- Designed a unique Denoising Autoencoder architecture and optimized it using the Least Trimmed Square, Projected Gradient Descent, and Robust Principal Component Analysis for the task of recognition of abnormal networking packets.
- The proposed approach showed an accuracy of around 95% (+/- 2%).

Genetic algorithm and Ensemble Learning Aided Text Classification using Support Vector Machines | International Journal of Advanced Computer Science and Application (IJACSA)

- Proposed a heuristic-based approach for document classification by modeling an algorithm using both Support Vector Machine and Genetic Algorithm.
- Combined the proposed algorithm with ensemble models to increase the classification accuracy.

Performance Analysis of Machine Learning Algorithms and Feature Extraction Methods for Sentiment Analysis | International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems (ICSES - 2021)

- Analyzed and measured the performance of different Machine Learning Algorithms when consolidated with various feature extraction methods.
- Tested the effect of numerous combinations of pre-processing steps on the final classification accuracy.

INITIATIVES AND RESPONSIBILITIES

Birla Institute of Technology and Science, Pilani, Dubai Campus | Chess Team Captain **August 2020 – June 2022**

ACHIEVEMENTS

- Received **"Best Chess Player of the Batch 2018 – 2022"** at BITS Pilani, Dubai Campus for impeccable performance in various tournaments and great captaincy.
- Awarded the **Director's All-Round Achievement Medal** at BITS Pilani, Dubai Campus.