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AYUSHI AGARWAL

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EDUCATION

Arizona State University – Master of Science in Computer Science **August 2022 – May 2024**

- 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**

TECHNICAL SKILLS

- Programming & Databases: Python, Java, MySQL, HTML, CSS, C, MATLAB, LaTeX
- Frameworks & Tools: FIJI/ImageJ, Microsoft Office, Wireshark, Jupyter Notebook
- Libraries: NumPy, Pandas, Keras, PyTorch, Tensorflow, Scikit-learn, Matplotlib

PROFESSIONAL EXPERIENCE

Graduate Research Assistant | LabV2, Arizona State University, Tempe **August 2022 - Present**

- Proposed and developed a causal metric for biomarker selection in gastric cancer classification, contributing to improved treatment options and prognosis for patients with gastric cancer.
- Investigated the challenges in machine learning, such as interpretability and adapting to data distribution, and addressed the limitations of standard techniques by introducing a causal approach that demonstrated improved performance with a limited number of biomarkers.
- Currently, working on a real-time ship anomaly detection method using Automatic Identification System (AIS) data, applying long-term recurrent convolutional networks with attention (LRCN), with a focus on identifying anomalous behavior in ships.

Graduate Teaching & Graduate Services Assistant | Arizona State University, Tempe **August 2022 – May 2024**

- Preparing and grading weekly assignments for CSE 110: 'Principles of Programming with Java' and CSE 205: 'Object-Oriented Programming and Data Structures'.
- Assisting students with their inquiries and monitoring during examinations to ensure the integrity of the test-taking environment.

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 Image 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

Visual Story Telling (Summer 2023)

- Developed a unique framework combining story generation and visual conversion, utilizing a custom dataset called Plot Summary dataset that includes title, genre, characters, inter-character relations, and basic plot information.
- Investigated the effectiveness of text generation models, such as T5 and DistilGPT, through conditioned fine-tuning, while also exploring the limitations of stable diffusion models in scene transition.

Can NLP Models 'Identify', 'Distinguish', and 'Justify' Questions that Don't Have a Definitive Answer? | TrustNLP @ ACL 2023

- Developed and curated the *QnotA* dataset, consisting of five categories of questions that lack definitive answers, along with corresponding QA instances.
- Conducted comprehensive experiments to evaluate the performance of state-of-the-art models, including GPT-3 and Flan T5, revealing their limitations compared to human performance.
- Provided valuable insights and findings through in-depth analysis, highlighting the ability of GPT-3 to generate reasonable justifications for *QnotA* questions despite its inability to accurately identify them.

ACHIEVEMENTS

- Received **Graduate College Q1 Travel Award** for ACL 2023 from ASU.
- Got merit-based scholarship **National American University Scholarship** (NAmU) on admission to Arizona State University for MS in Computer Science.
- Awarded the **Director's All-Round Achievement Medal** at BITS Pilani, Dubai Campus.
- Received **"Best Chess Player of the Batch 2018 – 2022"** at BITS Pilani, Dubai Campus for impeccable performance in various tournaments and great captaincy.
- Received a **scholarship** at BITS Pilani Dubai Campus for maintaining an exceptional CGPA throughout my undergraduate studies.