Aayush Agarwal

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Education

University of Illinois, Urbana-Champaign **Aug 2023 - Dec 2024 (Expected)**
Masters in Computer Science *GPA: 3.95 / 4.00*
Coursework: Advanced Information Retrieval, Data Mining, Natural Language Processing

SRM Institute of Science and Technology, Tamil Nadu, India **Jun 2018 - May 2022**
Bachelor of Technology in Computer Science and Engineering *GPA: 9.83 / 10.00*
Coursework: Algorithms, Machine Learning, Deep Learning, Artificial Intelligence, Data Science

Technical Skills

Languages/Database: Python, C++, C, Java, MySQL, OracleSQL, PrestoDB, MariaDB
Web Technologies: HTML, CSS, Javascript, Flask, Bootstrap
Frameworks & Tools: Tensorflow, Pytorch, NLTK, NumPy, Pandas, Tableau

Experience

WorkIndia **Jan 2022 - Feb 2023**
Data Scientist *Bengaluru, India*
- Spearheaded a project that increased customer retention by over 20%, working closely with cross-functional teams to analyze data and implement effective strategies
- Led the development of a User Activation Dashboard on Tableau, collaborating with the marketing and product teams to drive a 10% increase in user engagement
- Initiated a cost-saving measure that saved the company $25,000, coordinating with the communications team to assess and optimize channel effectiveness

Samsung R&D Institute **Apr 2021 - Nov 2021**
AI Research Intern *Bengaluru, India*
- Orchestrated the development of an AI-driven optimization technique for Multi Camera Network setups using computer vision and particle swarm optimization, improving installation efficiency by 25%
- Awarded a Certificate of Excellence for leading the team to outperform 12 competitors through strong collaboration, technical innovation, and impactful communication

National University of Singapore (NUS) & Hewlett Packard Enterprises (HPE) **Jun 2021 - Sept 2021**
Applied Deep Learning Intern *Singapore*
- Advanced expertise in Data Analytics and Deep Learning through collaboration with the NUS School of Computing team; utilized TensorFlow and PyTorch to refine NLP and Computer Vision projects
- Executed a collaborative analysis with HPE on real-world market data, enhancing product assortment and driving a 3% increase in sales and 10% reduction in warehouse costs

SRM BARC-BRNS ML Laboratory **Aug 2020 - May 2021**
Research Assistant *Chennai, India*
- Directed a team of 5 in developing and training Convolutional Networks (SSD and YOLOv3) for object detection and binary classification on ECIL Hyderabad's Baggage X-ray datasets, achieving a 0.97 F1 score
- Deployed models as Flask web apps on Xilinx PYNQ Z1 and NVIDIA Jetson Nano, thus enhancing user interface, user experience, and portability than previous MATLAB-based GUI applications

Projects

Language Liaison AI Learning Assistant (LLAILA) **Feb 2024 - May 2024**
- Developed LLAILA to personalize LLM responses, fine-tuning dual Llama models (7b and 70b) with over 600 student writing samples for more human-like and coherent interactions
- Evaluated LLAILA using key readability metrics; achieved a Flesch Kincaid score of 15.11, nearly matching the human score of 15.24, highlighting the model's effective personalization to user-specific styles

Real-Time Face Mask and Misuse Detection | *Project Link* **Mar 2021 - May 2021**
- Devised a video stream model for detecting face mask misuse with over 95% precision, featuring high generalization and bias-free performance, requiring no prior data
- Installed this solution at the Tech Park building in the university, capable of monitoring up to 5 faces simultaneously and reducing violations by over 80%

SRM Covid Treatment Support System **Oct 2020 - Feb 2021**
- Liaised with SRM Medical College Hospital to develop a CT-based COVID detection system, leading an interdisciplinary team of 8 to enhance diagnostic efficiency and treatment response
- Implemented an Attention U-Net model with thorough data preprocessing, including artifact removal, using heat maps to mark affected lung areas, achieving 92% accuracy

Diabetic Retinopathy | *Paper Link* **Jul 2019 - Jan 2021**
- Partnered with a multidisciplinary team to research and develop innovative deep learning methods for diagnosing diabetic retinopathy, achieving a sensitivity score of 95%
- Facilitated bi-weekly updates and feedback with a team of 5+, steering the project to success and publication in the Springer Advanced Deep Learning Journal