Abeer Mathur

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Education

Vellore Institute of Technology, Vellore   2021 – 2025
Bachelor of Technology in Computer Science (CGPA: 8.88)

Indian Institute of Technology, Madras   2021 – 2025
Bachelor of Science in Data Science and Programming (Online degree)

Skill Summary

Technical Skills: C/C++ | Java | Python | HTML | CSS | TensorFlow | Keras | CNN | NLP | Scikit-learn | Pandas | NumPy | Matplotlib | Seaborn | Ensemble Methods | DSA | Statistics | GitHub | Jupyter Notebook | Google Cloud | AWS SageMaker | Research

Soft Skills: Presentation Skills | Entrepreneurship | Leadership | Graphic Design | Video Editing | Visual Communication | Problem-Solving | Critical Thinking | Adaptability | Time Management |

Projects

- **PixelScan – Deepfake Detection** (https://pixelscan.site)   Mar 2024 – Aug 2024
  - ➤ Developed a Python-based web application using FastAPI with an Advanced CNN (ACNN) model integrated with MobileNet and XceptionNet, achieving 97.89% accuracy through an Ensemble Model and robust preprocessing techniques for 20,000+ images.
  - ➤ Deployed the app with a user-friendly interface for real-time DeepFake detection, receiving over 5,000 visits and model trials within 3 days.

- **VCYou – A prediction model for Startup success** (Github link)   Dec 2023 – Jan 2024
  - ➤ Developed a machine learning model using KNN, SVM, and Random Forest to predict startup success, aiding venture capitalists in financial decisions.
  - ➤ Created a Django-based web app integrating the model via joblib, offering a user-friendly interface for inputting parameters and receiving investment insights.

Professional Experience

- **National University of Singapore (NUS)**   Dec 2023 – Jan 2024
  Research Intern, Deep Learning and Data Analytics (School of Computing COM 2)
  - ➤ Focused on deep learning and data analytics, developing a predictive model to forecast startup success.
  - ➤ Leveraged advanced machine learning techniques to provide insights that aid venture capitalists in making informed investment decisions.
  - ➤ Led and collaborated and with a multidisciplinary team, applying data-driven approaches to real-world financial scenarios, enhancing the model's accuracy and reliability.

- **The Opportunities Portal & TRA (The Research Arena)** (https://theopportunitiesportal.com)   Nov 2023 – Dec 2023
  Founding Team Member and Co-founder
  - ➤ Founding team member of The Opportunities Portal, a platform connecting students with startups and research opportunities, played a key role in its acceptance into Y Combinator Startup School Phase-I.
  - ➤ Developed and implemented data-driven media and design strategies, significantly enhancing data visualization and communication.
  - ➤ Co-founded TRA, built a student community of over 250 members, streamlined research processes and developed AI products for research analysis and guidance.

- **Leo Club, VIT Vellore (Student led body of Lion's International)**   Mar 2022 – Feb 2024
  Board Member
  - ➤ Progressed from Junior Core Committee Member to Senior Core Committee Member, and ultimately to Board Member, a position held by only 15 out of 500 eligible members.
  - ➤ Directed a dynamic student-run NGO focused on health and wellness, engaging over 1,000 university students in impactful initiatives
  - ➤ Personally mentored a group of 50+peers and led successful diabetes and blood donation camps, enhancing community health and awareness.

Publications

- **Countering Deepfakes using an Improved Advanced CNN and its Ensemble with Pretrained Models**
  IEEE ICEEICT 2024 – Accepted and Presented, awaiting DOI
  Developed an ensemble model (ACNN, MobileNet, XceptionNet) for DeepFake detection, achieving 97.89% accuracy, 97.90% F1-score, and 0.996 ROC-AUC. Created a dataset of 12,890 images and demonstrated robust performance across diverse datasets. Received the Best Paper Award at the conference.

- **Unified Approach Integrating Machine Learning Algorithms for Detection of Email Phishing Attacks**
  IEEE ICCSC 2024 – Accepted, awaiting presentation
  Introduced novel integrability and all-round performance improvements in an email phishing detection model using NLP and ensemble classifiers (Random Forest, SVM), achieving over 98% accuracy.

- **Deepfake Detection: Emerging Techniques and Evolving Challenges**
  IEEE IEMECON 2024 – Accepted, awaiting presentation
  Comprehensive review analyzing DeepFake detection methods, evaluating datasets, algorithms, and countermeasures. Reviewed over 25 research papers.

Certifications

- **Executive Data Science** – Johns Hopkins University (Coursera)
- **Big Data Analytics and Deep Learning** – AWS Training Certification
- **Foundational Level Certificate in Data Science and Programming** – IIT Madras
- **Data analytics using Deep Learning** – National University of Singapore