Mudit Arora

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SUMMARY

Machine & Deep Learning Engineer with strong foundations in Data Science, NLP, LLMs, Computer Vision, RAG, and GenAI. Experienced in building and deploying AI models for real-world applications in the field of Healthcare, Education & Software. Driven by solving complex problems through innovative algorithms and data-driven solutions.

SKILLS

Programming Languages: Python, R Programming, C++, MATLAB, Java, JavaScript, MySQL
Frameworks/Libraries/Tools: PyTorch, TensorFlow, scikit-learn, Keras, NLTK, Pandas, NumPy, matplotlib, OpenCV, AWS, Azure, Git, Docker
Certifications: Technical Interview Prep (CodePath)

WORK EXPERIENCE

Teaching Assistant Apr 2023 – Present
Baskin School of Engineering, UC Santa Cruz Santa Cruz, CA

- Facilitate learning for **240+ undergrad students** in Computational Methods course under Prof. Daniel Fremont, boosting student comprehension by **20%**, through tailored office hours and interactive problem-solving sessions.

Machine Learning Researcher Aug 2023 – May 2024
Mayo Clinic Tempe, AZ

- Fine-tuned **Google's T5**-based Large Language Model using **Python**, **PyTorch**, and **scikit-learn**, achieving **87% accuracy** in extracting social determinants of health from clinical notes and predicting patient readmission within 30 days.
- Assisted hospitals in **reducing admission rates**, leading to **cost savings** in patient care management and improved clinical decisions.

Software Engineering Tutor Feb 2022 – May 2024
Academic Support Network, Arizona State University Tempe, AZ

- Mentored **20+** students weekly through personalized learning strategies, driving substantial improvements in study effectiveness.
- Facilitated high-level courses including Math, Statistics, and Programming (**Python, C++, MATLAB**), leading to an average performance **boost of 36%** and enhanced understanding in these subjects among the students.

Software Quality Assurance Intern May 2022 – Aug 2022
Knight Transportation Phoenix, AZ

- Innovatively constructed an agile approach, authoring detailed test cases and effectively resolving critical bugs via **Microsoft Azure DevOps** and **Elasticsearch**; optimized development processes, resulting in a **28% reduction in bug resolution** time.
- Orchestrated a collaborative effort with Backend Engineers to optimize User Experience, resulting in a **42% increase in app engagement** and a **23% decrease in user complaints**.

PROJECTS

Slug Meditate – CruzHacks 2025 Winner

- Built a VR meditation web app pipeline, utilizing **Google's Gemini API** to transform user text prompts into AI generated image (**Imagen 3**) and video (**Veo 2**) that then transforms it into a 3D scene mapping (**Gaussian Platting**), then add an AI generated music (**MusicFX**) that compliments the meditative vibe, and finally rendering the VR immersion (**Niantic Studio by 8th Wall**).
- Achieved a **success rate of 87%** in rendering immersive by processing over **14 unique** user prompts.

Multi-Lingual Emotion Detection System – SemEval 2025

- Architected both **LSTM and BiLSTM models** using **PyTorch** for single and cross-language scenarios, achieving **F1 scores of 0.35 and 0.33** respectively by language-aware attention mechanism, **FastText embeddings**, and extensive data preprocessing techniques.

Slot Tagging System for Natural Language Utterances

- Developed a **BiLSTM** model using **PyTorch** with **GloVe** embedding for slot tagging in natural language, achieving **88.7% F1-score** through optimization of embedding layers, model architecture, and hyperparameter including dropout rates and hidden dimensions.

.Language Modelling

- Engineered a decoder-only transformer architecture from scratch using **PyTorch**, implementing multi-head attention mechanism, positional encodings, and custom embedding methods that achieved **109.5** perplexity on the Penn Treebank validation set.

EXTRACURRICULAR ACTIVITIES

Vice President, Google Developer Student Club Jan 2023 – May 2024

- Enhanced training quality and industry-relevant skills through instructional material improvements and technical workshops, overseeing club operations for **8+ core team members** and **12+ technical project leads**. **Grew the club to 1500+** ASU members and increased social media visibility by **40%** through strategic content planning.

EDUCATION

Master of Science, Artificial Intelligence Expected Graduation: Dec 2025
University of California, Santa Cruz Santa Clara, CA

- **Relevant Courses**: Deep Learning for NLP, Data Science & Machine Learning, Intro to NLP GPA: 3.66

Bachelor of Science, Computer Science May 2024
Arizona State University Tempe, AZ

- Magna Cum Laude holder (GPA: 3.77), Dean's List holder & New American University Scholar, SUN Award holder (demonstrating leadership, supporting students' success)
- **Relevant Courses**: Artificial Intelligence, Data Structures & Algorithms, Software Engineering, Computational Biology