Abhijeet Beedikar

US Citizen | +16089102028 | beedikarabhijeet@gmail.com | linkedin.com/in/abhijeetbeedikar/ | github.com/AbhijeetBeedikar

Education

University of Wisconsin - Madison **September 2024 - May 2027 (Expected)**

B.S. Triple Major in Computer Science, Statistics, and Data Science | GPA: 3.957 | Dean's List Fall 2024, Spring 2025

Coursework: Algorithms, Statistical Experimental Design, Data Structures, Linear Algebra, Discrete Mathematics, Multivariate Calculus, Data Science Modeling, Computer Engineering

Projects

Autonomous Taxi Agent *(Reinforcement Learning | OpenAI Gym | Python)* ***July 2025***

- Trained an RL agent in OpenAI Gym's Taxi-v3 environment that optimizes pick-up and drop-off policies using Double Q-learning
- Implemented and tuned reward functions to achieve efficient route selection under varying state conditions.
- Explored the effectiveness of policy-based reinforcement learning for autonomous navigation in self-driving environments.

Adaptive Decision-Making System *(Reinforcement Learning | Monte Carlo Modeling | Python)* ***July 2025***

- Engineered a self-learning reinforcement learning system using Monte Carlo Tree Search (MCTS) guided by an Upper Confidence Bound (UCB) policy to generate adaptive strategies in a Connect-4 environment.
- Enabled dynamic, live learning during gameplay and policy refinement through iterative simulation against any user or agent.
- Improved runtime efficiency by reusing relevant subtrees and maintaining only the active subtree during simulations.

ClubMatcher.ai *(Natural Language Processing | Sentence Transformers | Python)* **November 2024**

- Built an AI-based system that recommends university clubs to students by analyzing personality traits and interests.
- Implemented semantic similarity using Sentence Transformers to generate personalized recommendations.
- Collaborated with a 4-member team in a 24-hour hackathon as the principal backend developer to ensure algorithm functionality.

Fake News Detector *(Natural Language Processing | Python | Data Preprocessing)* ***December 2023***

- Led a 6-member team to build a classification system using NLP to detect fake news with 89–95% accuracy.
- Built and trained a Random Forest classifier as the principal developer using features extracted from over 80,000 news articles after extensive text cleaning and preprocessing using regex and pandas.
- Directed project architecture and oversaw data processing, training, and evaluation stages to ensure reliable project performance.

Waste Segregation System *(Neural Networks | Image Processing | Data Cleaning)* **November 2023**

- Built an AI model capable of classifying 15 waste categories from images and real-time video feeds through transfer learning on a YOLOv7 model to help automate waste segregation and improve recycling efficiency.
- Developed a custom CSV-to-XML data conversion utility for data processing and leveraged Roboflow for dataset cleaning, augmentation and quick image annotation, improving model robustness and classification accuracy.
- Received technical feedback and guidance from Intel Inc. mentors to refine performance and optimize deployment efficiency.

Emergency Vehicle Detector *(Computer Vision | Python | Data Cleaning | Machine Learning)* **August 2023**

- Developed a vision-based system capable of detecting emergency vehicles in traffic scenes to facilitate adaptive signal control.
- Trained a convolutional neural network (CNN) on labeled vehicle datasets.
- Aimed at improving emergency response efficiency through integration into smart-city traffic infrastructure.

Technical Skills

Languages: Python, Java, R, Bash, HTML/CSS
Artificial Intelligence: Neural Networks, Keras, Tensorflow, PyTorch, Reinforcement Learning, OpenAI Gym, Computer Vision, Image Processing, Natural Language Processing, NLTK, Machine Learning, Scikit-learn, Data Cleaning, Decision Trees
Other: Statistical Analysis, Git, Hypothesis Testing, Monte Carlo Simulations, Project Management

Certificates

Kaggle Computer Vision (Feb 2025), Kaggle Intro to Deep Learning (Feb 2025), Kaggle Intro to Game AI and Reinforcement Learning *(Feb 2025),* Microsoft Learn Generative AI Fundamentals Badge *(Jan 2025),* Microsoft Learn AI Security Fundamentals Trophy *(Jan 2025)*, Kaggle Intermediate Machine Learning *(Aug 2024),* Kaggle Intro to Machine Learning *(Aug 2024)*

Achievements

YUVAi 2023 Top 50 Finalist *(Issued by NeGD India, Intel Corp., MeitY India, Digital India)* ***November 2023***

Developed a Top 50 Innovative AI Project at the YUVAi program--a national-level AI program.

#9 CodeWars 2023 CodeBattle *(Issued by HP Enterprise, Codingal)* **April 2023**

Ranked 9th in an Indian national-level hackathon conducted by HP Enterprise and Codingal.