Aadvait Hirde

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EDUCATION

Indiana University, Bloomington — **Bloomington, IN**
Bachelor of Science: Major in Computer Science, Specialization in AI, Minor in Business — 2023 - 2027
Cumulative GPA: 3.5 / 4.0 ⋅Major GPA: 3.6 / 4.0
⋅Dean's List⋅Hutton Honors Scholar⋅Global Engagement Scholar⋅Luddy Direct Admit
Relevant Coursework: Discrete Math, Calculus I, Data Structures and Algorithms, Managerial Economics and Strategy, Artificial Intelligence, Object Oriented Programming, Data Analysis and Mining, Machine Learning

EXPERIENCE

Cognizant — **Dubai, UAE**
Machine Learning Intern — May 2024 - Aug 2024

⋅Developed a scalable recommendation system using Python, TensorFlow, and PyTorch, improving personalized recommendations for over 100,000 users.
⋅Designed and implemented feature engineering pipelines to process large-scale datasets (5TB+) using Apache Spark and Pandas, reducing preprocessing time by approximately 30%.
⋅Conducted model performance analysis using precision, recall, F1 score, and ROC-AUC metrics, achieving a ~12% improvement over baseline models.
⋅Fine-tuned state-of-the-art transformer models (BERT, GPT) for text classification tasks, achieving a 95% accuracy rate in sentiment analysis for user reviews.
⋅Collaborated with a cross-functional team to deploy machine learning models in production via Flask and FastAPI, utilizing AWS SageMaker for model hosting.

MyCaptain — **Dubai, UAE**
Software Development Intern — May 2023 - Aug 2023

⋅Developed a dynamic web application using the MERN stack with advanced state management via Redux and server-side rendering with Next.js, managing over 50,000 daily active users.
⋅Integrated RESTful APIs with Express.js and MongoDB, used GraphQL with Apollo Server for efficient data querying and implemented containerization through Docker and Kubernetes.
⋅Built a predictive machine learning model with Python, scikit-learn, and TensorFlow, including feature engineering and hyperparameter tuning, enhancing targeted marketing effectiveness.
⋅Worked with DevOps team to implement CI/CD pipelines with Jenkins and GitLab CI, manage infrastructure with Terraform, and containerize with Docker and Kubernetes.

PROJECTS AND RESEARCH

MNIST and CIFAR-based Real-Time Image Classification Systems using CNNs and Tensorflow — Aug 2024 - Nov 2024
CIFAR Code⋅CIFAR Paper⋅MNIST Code⋅MNIST Paper

⋅Developed real-time image classification systems for both MNIST digit recognition and CIFAR-10 object classification, achieving over 90% accuracy across various object classes.
⋅Implemented CNNs with regularization techniques to optimize performance and prevent overfitting.
⋅Created interactive OpenCV interfaces for real-time object and digit recognition from live webcam footage.
⋅Processed and enhanced images using techniques like Gaussian blurring, binary thresholding, and data augmentation.
⋅Visualized performance with confusion matrices, ROC curves, precision-recall curves, and confidence distributions using Matplotlib.
⋅Proposed future system improvements, including class balancing, advanced feature engineering, and transfer learning techniques.

Forecasting Cryptocurrency Prices with Transformers and Stance Detection — Jun 2022 - Nov 2022
IEEE Xplore⋅PDF

⋅Developed a stance detection model using the RoBERTa transformer, achieving 80% accuracy in predicting tweet sentiment towards Bitcoin and implemented an RNN with LSTM, reaching an MAE of just $1144.85.
⋅Utilized Twitter API for retrieving Bitcoin-related tweets and yfinance library for historical price data.
⋅Applied logistic regression for sentiment analysis, achieving 78% accuracy in predicting tweet sentiment.
⋅Used sklearn for data preprocessing and model scores, and Huggingface for accessing pre-trained transformer models.
⋅Employed Adam optimizer for RNN training and suggested GridSearchCV and Bayesian optimization for future hyperparameter tuning.

The Locus Project — Aug 2022 - Nov 2022
Article⋅GitHub Repository

⋅Developed an AR-based indoor navigation application using Unity, implementing C# scripts for AR interactions, object placement, and UI management, implemented AR Foundation, ARCore, and ARKit modules and leveraged Depth APIs.
⋅Designed a QR code-based tracking system, utilized Unity's scene management to create a scale model of the campus, assigning navigation targets to each classroom, which enabled real-time pathfinding by rendering AR lines from user location to destination using AR functionalities.

SKILLS AND CERTIFICATIONS

Languages: Java, Python, HTML, CSS, JavaScript, SQL, DrRacket
Frameworks and Libraries: Bootstrap and Tailwind CSS, React.js, Node.js, Express.js, Next.js, Vue.js, Pandas, NumPy, Matplotlib, Scikit-learn, TensorFlow, PyTorch, Keras, MLFlow
Tools: MS Office, AWS, GitHub, Adobe Suite, Unity, DaVinci Resolve, FL Studio
Certifications: ⋅Machine Learning Certification⋅Flutter and Dart Certification