ABDELRAHMANE BENSAHLA

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EDUCATION

Rutgers University - New Brunswick - *Bachelor of Science in Computer Science*   Sep 2021 – May 2025

WORK EXPERIENCE

Cembre Inc.   May 2024 – Sep 2024
Data Scientist Intern   Edison, NJ
- Analyzed production data to optimize manufacturing, resulting in a 15% increase in efficiency for electrical connector production
- Developed machine learning models to predict maintenance needs, reducing downtime by 20% in railway sector installations
- Built data visualization dashboards that improved decision-making, leading to a 10% decrease in defect rates for cable lugs
- Automated data collection processes, enhancing data accuracy by 25% and enabling better predictive analysis
- Documented software and data workflows, ensuring scalability and knowledge transfer across teams

Rutgers School of Engineering   Sep 2021 – Present
IT Logistics Specialist   New Brunswick, NJ
- Enhanced asset management by implementing a cloud-based inventory system, resulting in a 25% reduction in equipment loss
- Optimized equipment procurement by implementing a standardized procurement process, shortening equipment acquisition lead times by 30% and expediting research endeavors
- Improved user support through collaborating to create a comprehensive knowledge base and implemented a ticketing system, increasing self-resolution rate for IT support by 20% and improving user satisfaction

PROJECTS

Job Fraud Detection Using Neural Networks & TF-IDF (Python)
- Built a deep learning model with an average 98% accuracy across all metrics using TensorFlow to classify job listings as fraudulent or legitimate, leveraging both textual and categorical data
- Preprocessed 10,000+ text features (job titles, descriptions, and requirements) using TF-IDF vectorization, transforming textual data into a numerical format for model input, combined with one-hot encoded categorical data for feature engineering, ensuring a comprehensive feature set for model training, implementing a feed-forward neural network with ReLU activations, Dropout layers for regularization, and a final sigmoid layer for binary classification
- Achieved improved classification performance by tuning model hyperparameters and applying data normalization techniques
- Evaluated model performance using metrics like precision, recall, and F1-score to account for potential data imbalance

AI Trajectory Planning with A* Algorithms (Python)
- Implemented Forward A*, Backward A*, and Adaptive A* to navigate agents in dynamic grid environments, achieving 30% faster pathfinding on average, testing 50+ scenarios, optimizing tie-breaking strategies and heuristics for efficient search
- Reduced computational overhead by 40% using binary heaps and consistent Manhattan heuristics, ensuring scalability for large grids

Movie Recommendation Web Application (Python, HTML, CSS)
- Full Stack Developed a scalable web-based movie recommendation system using Flask, and pandas on a data set of over 500,000 movies; deployed on an AWS Elastic Beanstalk with logging and monitoring via AWS CloudWatch

Motor Vehicle Collision Data Visualization (Python)
- Launched an interactive web application to visualize motor vehicle collision data using pandas and Folium libraries, plotting collision locations on a map with custom pop-ups detailing date and casualties

Web Scraping Program (Python)
- Deployed and managed on a server, leveraging API integration to gather 1000s of real-time data updates on pricing trends for any listing on eBay, enabling comprehensive analysis and insights into price trends

Image Recovery Program (C)
- Formulated a low-level C program to recover JPEGs from corrupted memory cards with a 98% success rate, preventing data loss and saving users time and data

Image Filtering Program (C)
- Constructed a lightweight, efficient C program to filter BMP images by manipulating every pixel without sacrificing quality while reducing time usage by 33% in contrast to using applications similar in functionality

Image Collage Manipulation (Java)
- Architectured a Java program to build and manipulate collages of images of any size, including the ability to colorize, replace, and grayscale 100s of individual tiles

Portfolio Website (HTML, CSS, JavaScript)
- From sketch to showcase: Built a portfolio website establishing it onto GitHub demonstrating front-end development prowess

SKILLS

- *Programming Languages:* Python, R, SQL, Java, Javascript, C, C++, CSS, HTML
- *Technologies:* Git, Docker, Jupyter, MYSQL, PostgreSQL, MongoDB, NoSQL, AWS, GCP, MS Azure, Django, Flask
- *Libraries:* pandas, numPy, MatPlotLib, Seaborn, Tableau, Regex, TensorFlow, Scikit-Learn, Keras, PyTorch