

ABINASH BASTOLA

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EDUCATION

University of Texas at Arlington

Expected May 2026

Bachelor of Engineering in Computer Science | GPA: 3.7

Relevant Coursework: Introduction to Computers & Programming, Intermediate Programming, Object-Oriented Programming, Computer Organization & Assembly Language, Discrete Structures, Algorithms & Data Structures, Engineering Probability, Linear Algebra, Calculus I, Calculus II, Calculus III, Professional Practices, Theoretical CSE, Database Systems and Implementation,

Extracurriculars: Association of Computing Machinery, Mavrick Rover Team, SEAR Lab, Cybersecurity Club

Tarrant County College

Expected December 2026

Associates of Information Technology in Cybersecurity | Certificate in Cybersecurity | Certificate of Ethical Hacking | GPA: 4.0

Relevant Coursework: Introduction to Computer Technology, Fundamentals of Networking Technology, Fundamentals of Information Security

EXPERIENCE

Oval Solutions | Data Science Intern

August 2024 – Present

- Cleaned and preprocessed 30,000+ rows of data from multiple sources (CSV, SQL, APIs) using Pandas, improving data quality by 15%.
- Conducted EDA on datasets up to 50,000 rows, identifying trends, outliers, and anomalies to inform strategic decisions.
- Developed 20+ visualizations (scatter plots, histograms, heatmaps) using Matplotlib and Seaborn to present actionable insights.
- Built and fine-tuned predictive models (e.g., linear regression, decision trees) with scikit-learn, improving forecasting accuracy by 12%.
- Wrote and optimized complex SQL queries for data extraction and aggregation from MySQL/PostgreSQL, reducing query times by 20%.
- Deployed machine learning models using Flask and Docker, ensuring stable performance and a 15% improvement in prediction reliability.
- Documented analysis, code, and results in Jupyter Notebooks, automating report generation and reducing manual efforts by 25%.

SEAR Lab | Undergraduate Research Assistant

August 2024 – Present

- Integrated solar cell data from 100+ unique endpoints via RESTful APIs, ensuring seamless data flow from a dedicated LAN.
- Aggregated and organized 10,000+ data entries into scalable CSV files, improving accessibility and streamlining workflows.
- Created 30+ visualizations (scatter plots, dot plots, histograms) using Python (NumPy, Pandas, Matplotlib) to analyze solar performance.
- Analyzed visualized data to assess solar energy viability, providing actionable insights for renewable energy initiatives.
- Maintained detailed engineering notebooks documenting 200+ experiments to ensure compliance and support future R&D efforts.

PROJECTS

Quantitative Stock Trading

- Developed a quantitative trading strategy in Python, achieving a 15% ROI in 4 weeks by predicting stock price fluctuations.
- Analyzed 100,000+ data points from e-commerce platforms to identify trends and optimize trading strategies.
- Applied machine learning models (Random Forest, XGBoost) to forecast stock prices, improving prediction accuracy by 20%.
- Backtested trading strategies on 5+ years of data, achieving a Sharpe ratio of 2.5, outperforming market returns by 30%.
- Built and deployed an automated trading bot using Alpaca API, executing 1,000+ trades with a 68% win rate.
- Visualized trading performance with Matplotlib and Tableau, providing actionable insights for stakeholders.

Eaton Energy Analysis with Interactive Dashboard

- Developed an automated data pipeline using the Eaton API to collect and visualize real-time energy data from over 100 smart breakers, enabling continuous monitoring of power consumption across multiple sites.
- Analyzed peak power consumption (10,000+ data entries) against solar panel output, identifying inefficiencies and pinpointing opportunities for optimization to improve overall energy usage and reduce costs.
- Applied Python, Pandas, and Matplotlib to create dynamic visualizations that tracked energy trends over 6 months, uncovering seasonal power usage patterns and providing actionable insights for improving energy efficiency and load balancing.
- Leveraged machine learning models to predict peak demand periods, achieving 85% accuracy in forecasting, which helped optimize energy storage and distribution strategies.
- Developed a dashboard to visualize energy performance metrics in real-time, providing stakeholders with clear insights for proactive decision-making and energy-saving initiatives.

Energy Production and Weather Correlation Analysis with Dashboard

- Developed a Python pipeline integrating 15,000+ solar panel data points with weather patterns using the Requests library for data collection.
- Analyzed energy production trends, identifying key weather factors (e.g., temperature, cloud cover) that impacted efficiency, providing insights for optimization.
- Created 20+ visualizations with Matplotlib to communicate energy-weather dependencies to stakeholders.
- Conducted routine solar panel inspections at Wolf Hall College, increasing energy production efficiency by 5% through maintenance.
- Collected 100,000+ data points/month via the Enphase API to analyze energy production, conditions, and panel status for system optimization.
- Created visualizations showing a 20% increase in energy output during summer months, uncovering trends for system improvements.
- Built a Random Forest Regressor model with scikit-learn, achieving 92% accuracy in next-day energy forecasts.
- Recommended panel tilt adjustments and maintenance changes, improving system efficiency by 7-10

ADDITIONAL INFORMATION

Languages/Dev Tools: HTML, CSS, JavaScript, Node.js, Java, Python, C/C++, C#, Lua, Solidity, SQL, PostgreSQL, Selenium, Git, Linux/Unix, Hardhat, Docker, .NET, Postman, Flask, React, ARMv8 Assembly, Unit Testing, AWS, GCP, Kafka, Prometheus, Debezium, Grafana, Starlark, Go