ARUSHI GUPTA

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WORK EXPERIENCE

Intern Team Lead *Jun 2025 - Aug 2025*
ReVenture AI | Remote

- Led a team of interns in developing and implementing AI-driven solutions for optimizing business processes.
- Designed and deployed AI workflows using n8n to automate data collection and reporting for climate-focused non-profits, increasing operational efficiency by 30%.
- Fine-tuned AI agents to streamline communications with clients and classify future clients, increasing sales by 80%.
- Collaborated directly with leadership to shape ethical AI deployment policies, conducting competitive research on LLMs and integrating findings to ensure responsible use of automation across 10+ client projects.

Generative AI Model Trainer - Mathematics & Python *Jun 2024 - Aug 2024*
Outlier AI | Remote

- Developed and executed training methodologies for AI models, focusing on evaluating and improving responses in mathematics and Python programming.
- Trained AI models by evaluating 500+ weekly responses in mathematics (calculus, linear algebra, probability) and Python programming (data structures, algorithms, scientific computing) with 70% accuracy.
- Applied dual expertise to validate mathematical proofs in LaTeX and debug Python implementations, ensuring model outputs met rigorous academic and coding standards.
- Developed comprehensive critiques for model improvements, focusing on mathematical reasoning accuracy and Python code practices, contributing to a 25% increase in response quality metrics.

Teaching Assistant- Data Structures and Algorithms *Aug 2025 - Present*
Purdue University | Elmore Family School of Electrical and Computer Engineering

- Guided students through advanced problem-solving in data structures and algorithms, covering topics such as balanced trees, graph traversal, dynamic programming, and asymptotic analysis in C for a 300-level class.
- Led weekly discussion sessions increasing participation rate by 25% over the semester.

EDUCATION

Bachelor of Science in Computer Engineering: AI & ML Concentration *Aug 2023 - May 2026 (Expected)*
Purdue University, West Lafayette, Indiana *GPA 3.5*

- Completed coursework in AI, Computer Vision, Data Mining, Probabilistic Statistics, Python for Data Science, Linear Algebra

SKILLS

Languages: Python, C, C++, C#, JavaScript, HTML/CSS, MATLAB, SQL

AI/ML & Data Science: TensorFlow, Keras, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, NLP, LLM, Neural Networks

PROJECTS

Computer Vision for Autonomous Line Following *Oct 2025 - Present*

- Developed a two-part vision pipeline: 1) Line Detection utilizing color thresholding (HSV) for road line centroid estimation; 2) Traffic Light Detection via distinct color-based segmentation to isolate Red and Green signals.
- Implemented a Finite State Machine (FSM) in Python to integrate perception, enabling autonomous switching between the STOP state (Red light) and the LINE-FOLLOW state (Green light).
- Tuned a Proportional-Integral-Derivative (PID) controller to convert line deviation into precise steering adjustments, optimizing trajectory for stable, high-speed autonomous navigation within the ROS framework.

Smart Grocery Receipt Scanner and Expense Analyzer *Aug 2025 - Present*

- Engineered a data pipeline utilizing Tesseract OCR for initial text extraction and Regex for cleaning and accurate item/price pair extraction.
- Implemented Unsupervised Learning for categorization: used Sentence Transformers to generate semantic embeddings, followed by Agglomerative Clustering to group items (e.g., Produce, Dairy).
- Optimized cluster formation by using the Silhouette Score metric to programmatically determine the optimal number of groups (k), ensuring high classification quality.
- Validated performance using Receipt Parsing Accuracy (RPA), achieving a 90% RPA for reliable budgetary data extraction.

Sentiment Analysis Neural Network *Jun 2025 - Jul 2025*

- Automated sentiment classification by building a deep learning pipeline that processed 20,000+ text samples through tokenization and padding techniques, achieving consistent input formatting for neural network training and enabling scalable text analysis.
- Engineered a custom neural network architecture combining embedding layers with global average pooling to capture semantic meaning, iteratively training and validating the model over 30 epochs to deliver an 85% accurate sentiment classifier capable of categorizing text into multiple sentiment classes.