Dhairya Adroja

Rajkot, Gujarat, India — +91 9664847885 — dhairyaadroja3391@gmail.com
LinkedIn — GitHub — Portfolio

Summary

- AI/ML enthusiast and Computer Science student with hands-on experience in machine learning algorithms, neural networks, and embedded systems. Proven track record in developing AI-powered applications with 95% accuracy. Passionate about creating intelligent systems that solve complex real-world problems through innovative AI solutions.

Skills

- **Machine Learning:** Neural Networks, Deep Learning, Pattern Recognition, Computer Vision, NLP
- **AI/ML Frameworks:** PyTorch, TensorFlow, scikit-learn, OpenCV, NumPy, Pandas, Matplotlib
- **Programming Languages:** Python, R, C/C++, MATLAB, JavaScript, SQL
- **Embedded Systems:** Microcontrollers, IoT Development, Real-time Systems, Sensor Integration
- **Data Science:** Data Analysis, Statistical Modeling, Data Visualization, Feature Engineering
- **Tools & Platforms:** Jupyter, Google Colab, Docker, Git, Linux, Arduino, Raspberry Pi

Projects

- **CodeTrade - Intelligent Pattern Recognition System** — Python, NumPy, Pandas, scikit-learn
  GitHub — *Financial AI/ML Platform*
  - Developed advanced pattern recognition algorithms achieving 95% accuracy on 50,000+ financial data points
  - Implemented machine learning pipeline with feature engineering, model selection, and hyperparameter tuning
  - Created vectorized NumPy algorithms with intelligent caching, optimizing computation speed by 60%
  - Built dual-interface system supporting real-time ML inference for 25+ concurrent users
  - Deployed scalable ML model processing 1000+ files per hour with automated data validation
- **MatterMind - AI-Powered Physics Simulation** — JavaScript, TensorFlow.js, Neural Networks
  GitHub — Live Demo
  - Developed AI-enhanced physics engine predicting particle behaviors with 95% collision accuracy
  - Implemented neural network models for real-time physics parameter optimization
  - Created machine learning algorithms for dynamic system behavior prediction and adaptation
  - Optimized AI inference pipeline achieving 60 FPS performance with 1000+ particle interactions
- **Intelligent Chat Analytics System** — Python, NLP, MongoDB, Machine Learning
  GitHub — *AI-Powered Communication Analysis*
  - Built intelligent spam detection system achieving 99.5% accuracy using ensemble ML methods
  - Implemented natural language processing for sentiment analysis and conversation insights
  - Developed real-time ML inference system processing 100+ concurrent chat messages
  - Created automated content moderation using deep learning models with transfer learning
- **Embedded AI Vision System** — C++, OpenCV, Raspberry Pi, TensorFlow Lite
  Computer Vision on Edge Devices
  - Developed real-time object detection system on Raspberry Pi with 30 FPS performance
  - Implemented optimized neural network inference using TensorFlow Lite for edge deployment
  - Created custom computer vision pipeline with preprocessing and post-processing optimization
  - Built IoT integration with sensor fusion and wireless communication protocols
- **Aarambh - AI-Powered Learning Platform** — Python, TensorFlow, NLP, Recommendation Systems
  GitHub — *Final Year Project - Educational AI*

- Developing intelligent learning platform with personalized content recommendation using collaborative filtering
- Implementing NLP-based content analysis for automatic difficulty assessment and learning path optimization
- Building student performance prediction models using ensemble methods achieving 92% accuracy
- Creating adaptive learning algorithms that adjust content delivery based on individual learning patterns

Experience

- **Teaching Assistant - Object Oriented Programming (Java)** June 2025 – Dec 2025
  Darshan University *Rajkot, Gujarat*
  - Mentored 50+ students in Java programming with focus on AI/ML algorithm implementation
  - Conducted practical sessions on data structures and algorithms essential for machine learning
  - Developed AI-focused coding exercises and projects improving student engagement by 35%
  - Assisted students in implementing machine learning concepts using Java-based frameworks

- **AI/ML Research & Development (Personal Projects)** 2023 – Present
  Machine Learning Engineering *Self-Directed Research*
  - Designed and implemented machine learning solutions for pattern recognition and computer vision applications
  - Conducted experiments with neural network architectures, achieving significant performance improvements
  - Developed end-to-end ML pipelines from data collection to model deployment and monitoring
  - Researched cutting-edge AI techniques and implemented innovative solutions for real-world problems

- **Open Source AI/ML Contributor** 2023 – Present
  Various Projects *GitHub Community*
  - Contributed to 5+ open-source AI/ML projects, improving model accuracy and performance optimization
  - Implemented feature engineering and model optimization techniques across multiple repositories
  - Collaborated with global AI research community on algorithm development and best practices

Research & Innovation

- **Pattern Recognition Research:** Developed novel algorithms for financial pattern detection with 95% accuracy
- **Physics AI Integration:** Created innovative approach combining AI with physics simulation for predictive modeling
- **Edge AI Optimization:** Researched efficient neural network deployment on resource-constrained devices
- **Real-time ML Systems:** Specialized in building low-latency AI systems for production environments

Achievements

- * 1st Place Winner - CodeTrade Hackathon: AI-powered pattern recognition system (July 2025)
- * Multiicon Hackathon Winner - Secured internship opportunity through innovative AI/ML solution
- * Chess Champion - 1st Place Team Event, Runner-up Individual Competition demonstrating strategic thinking
- * AI Innovation: Developed 3 original machine learning algorithms with published implementations
- * Performance Optimization: Achieved 60% improvement in ML inference speed through algorithmic innovation
- * Model Accuracy: Consistently achieved 95%+ accuracy across multiple AI/ML projects

Certifications & Continuous Learning

- Self-studied Advanced Machine Learning, Deep Learning, Computer Vision, and Embedded AI Systems
- Hands-on experience with production ML model deployment and monitoring systems
- Active participation in AI/ML research communities and conferences
- Continuous learning of emerging AI technologies including LLMs, computer vision, and edge AI

Education

- **Bachelor of Technology in Computer Science and Engineering** Expected May 2027
  Darshan University, Rajkot, Gujarat *CGPA: 8.1/10*
  - Relevant Coursework: Machine Learning, Artificial Intelligence, Data Structures, Algorithms, Statistics
- **Diploma in Computer Science and Engineering** May 2023
  Kalyan Polytechnic, Jamnagar, Gujarat *First Class with Distinction*
  - Foundation: Programming Fundamentals, Mathematics, Electronics, Embedded Systems

Languages

- **English:** Professional proficiency
- **Hindi:** Native proficiency
- **Gujarati:** Native proficiency