

# Karthik K Pagnis

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## Professional Summary

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Results-driven AI Engineer with 1.5+ years of hands-on experience in machine learning, deep learning systems, and intelligent automation. Proven expertise in developing scalable AI/ML solutions, neural network architectures, and data-driven applications achieving 95% coverage. Strong foundation in neural networks (CNN, RNN), NLP, computer vision, and advanced data science techniques with production-ready implementations. Proficient in building end-to-end AI systems using TensorFlow, PyTorch, and Scikit-learn with expertise in data analysis, visualization, and model optimization. Demonstrated ability to architect intelligent solutions, mentor engineering teams, and drive innovation that reduces defects and accelerates product development. Excellent problem-solving skills with experience presenting AI/ML solutions to stakeholders.

## Professional Experience

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### Sandisk (Magnit), Bengaluru

*Design Verification Engineer*

02/2025–Present

- Engineered Python-based intelligent automation scripts for firmware validation with ML-driven data pipelines, enabling **IDF submissions** and earning **Trade Secret award**; architected AI-powered test framework with predictive analytics **reducing manual effort by 30%** and **increasing coverage from 70% to 95%**.
- Built automated validation workflows leveraging Python, Pandas, NumPy, and machine learning algorithms for anomaly detection and data visualization **reducing product launch time by 15%** and **field defects by 10%**; mentored 2 engineers on AI/ML best practices, **increasing team productivity by 25%**.

### Western Digital (Magnit), Bengaluru

*Design Verification Engineer*

07/2024–02/2025

- Executed protocol validation across 50+ test suites ensuring **100% compliance**; developed intelligent Python scripts applying machine learning for automated data parsing, pattern recognition, and predictive analysis using Pandas/NumPy and statistical modeling.
- Built AI-driven test automation framework with advanced data visualization dashboards, **reducing debug time by 25%** and **decreasing customer escalations by 20%** through ML-based root cause analysis and performance optimization; delivered technical presentations on AI/ML insights to stakeholders.

### Western Digital, Bengaluru

*Validation Engineering Intern*

10/2023–06/2024

- Developed 5+ intelligent Python automation scripts applying machine learning for pattern recognition and anomaly detection **eliminating 40% of manual tasks** and **saving 15+ hours weekly**; applied data science techniques for root cause analysis **reducing debugging cycles by 15%**.
- Contributed to AI-driven quality initiatives using statistical analysis and predictive modeling **reducing production defects by 12%**, supporting **successful launch of 2 major product releases**.

## **Virato - Crypto Trading Bot, Bengaluru**

**Founder & CEO**

08/2021–01/2022

- Developed end-to-end automated trading platform using Python and MongoDB with intelligent data pipelines **processing 100+ trades**; integrated with third-party APIs implementing secure data processing and real-time analytics, demonstrating full-stack AI/ML development skills.
- Architected machine learning-based risk management and recommendation algorithms using predictive modeling, **scaled to 10+ active users**, demonstrating expertise in building intelligent systems and algorithmic trading solutions.

## **Education**

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### **Indian Institute of Technology Madras (IIT Madras), Chennai, India**

*Master of Technology (M.Tech) in Artificial Intelligence*

09/2025 – 06/2027 (Expected)

### **REVA University, Bengaluru, India**

*Bachelor of Technology (B.Tech) in Artificial Intelligence & Machine Learning*      12/2020 – 06/2024

## **Project**

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### **Seeing the World Through Words — Image Captioning Using Neural Networks — Python, TensorFlow, Keras, OpenCV**

- Engineered end-to-end image captioning system combining CNN (VGG16/ResNet) for feature extraction with **attention mechanism** for sequence generation, **achieving 85%+ accuracy** on Flickr8k dataset with 8,000+ preprocessed images.
- Integrated Google Text-to-Speech API for audio output and implemented **beam search decoding**, creating **accessible solution for visually impaired users** evaluated using BLEU score metrics.

## **Technical Skills**

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- **Languages:** Python, C, SQL — **Databases:** MySQL, MongoDB
- **AI/ML Frameworks:** TensorFlow, Keras, PyTorch, Scikit-learn, XGBoost — **Specializations:** Deep Learning, Neural Networks, Recommendation Systems, Predictive Modeling, Computer Vision, Image Processing
- **Deep Learning & NLP:** CNN, RNN, LSTM, Attention Mechanisms, Transformers, Natural Language Processing
- **Data Science:** Pandas, NumPy, Matplotlib, Seaborn, Statistical Analysis, Feature Engineering
- **NLP Libraries:** NLTK, Spacy — LLM concepts, Generative AI, Prompt Engineering
- **Tools & Development:** Git/GitHub, Jupyter, VS Code, Docker, Linux/Unix
- **Professional Skills:** Problem Solving, Algorithm Design, Research & Development, Mentorship, Technical Communication, Collaboration

## **Certifications & Awards**

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- **Amazon ML Summer School** – Completed intensive program covering supervised/unsupervised learning, deep neural networks, probabilistic models, and dimensionality reduction with hands-on projects
- **Trade Secret Award** – Sandisk (2025) for innovative firmware verification methodology
- **Dean's List** – REVA University (2020-2024) for consistent academic excellence