

# Abhishek Karthik J

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## Education

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- **B.Tech — Computer Science and Engineering (Artificial Intelligence)**  
Amrita School of AI, Amrita Vishwa Vidyapeetham 2023 – Present **CGPA:** 7.3
- **Higher Secondary (Grade 12)** — Velammal Vidyalaya, Chennai Mar 2023 Percentage: 79.3%
- **Secondary (Grade 10)** — Velammal Vidyalaya, Chennai Mar 2021 Percentage: 86%

## Projects

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### AI-Enabled ERP System *Ongoing*

- Full-stack ERP using Next.js, Node.js, and PostgreSQL.
- Added AI automation: LLM querying, NLP-based document parsing, analytics API support.
- Designed scalable modules and intelligent reporting workflows.

### IoT-Based Smart Pipe Counting System *Patent Level*

- Real-time IoT-vision system using Raspberry Pi, YOLO, and Roboflow.
- Used OpenCV to detect nested pipes and calculate diameters.

### Finding the Exoplanet *2024*

- Analysed NASA Kepler data using light curve processing and noise filtering.
- Implemented classification using Scikit-learn and visualised using Matplotlib.

### Automated PVC Hot Water Coupling — AI & Robotics *2024*

- Built robotic system using YOLOv8, inverse kinematics, and optimisation.

### Multimodal Transformer-Encoder for Dynamic Pricing *2025*

- Used text, numeric, and categorical inputs for cross-modal attention.
- Implemented MC Dropout + Bayesian Networks for uncertainty estimation.

### Aspect-Based Sentiment Analysis for Code-Mixed Text *2025*

- Designed a custom parameter transformer architecture for multi-task learning (sentiment, offensiveness, and aspect detection) on Tamil-English text.
- Developed a weak supervision pipeline and integrated dimensional statistical and semantic features using multi-modal fusion.

## Technical Skills

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**Programming:** Python, C, HTML, CSS, JavaScript, MATLAB

**Libraries/Frameworks:** PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, OpenCV

**Web Development:** React.js, Next.js, HTML5, CSS3

**Backend & Database:** Node.js, SQL

**Tools:** Git, GitHub

**Other:** Machine Learning, Deep Learning, Computer Networks, Feature Engineering.

## Achievements

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- EvoLUMIN ACM 2024 — Grand Finale Shortlist (Remote Health Monitoring System using IoT).
- Smart India Hackathon 2025 — Shortlisted for Second Round.