

# SHASHANK S NAYAK

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## OBJECTIVE

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Engineering undergraduate at Manipal Institute of Technology with a background in research machine learning and web application development. Demonstrated expertise in effective communication, collaborative teamwork and event management. Disciplined and motivated, seeking 2025 Summer internship opportunities.

## EDUCATION

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**BTech in Cyber Physical Systems**, MIT Manipal

2022 - 2026

**Relevant Coursework:** Data Structures, Computer Architecture, Unsupervised Intelligence, Digital System Design, Data Communications and Networks, Embedded Systems Design and Programming, Control Systems, Micro-controllers.

**Current CGPA (10GPA) : 8.16** (6.86, 7.29, 8.36, 9.10, 9.32 - upto 5/8 semesters)

## SKILLS

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<b>Technical Skills</b>	Algorithms, Data Structures, Machine Learning, Web Development, Linux
<b>Soft Skills</b>	Effective Communication, Event Planning, Creative Problem Solving, Teamwork
<b>Language Skills</b>	English, Kannada, Hindi

## EXPERIENCE

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**Research Assistant**

May 2024 - July 2024

Part-time, Machine Learning for Advanced Process Control Lab

MIT, Manipal

- Implemented various machine-learning algorithms in real time on a lab-scale Batch reactor
- Objective was to achieve optimal trajectory tracking.
- Worked under Dr. I. Thirunavukkarasu and co-authored a few machine learning publications

## PROJECTS

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**Detectify, a deepfake detection web-application** Built a deepfake detection solution to delve into the field of AI safety. This product involved usage of machine learning algorithms to detect deepfakes and was integrated on a web platform to serve the users. My main contribution was to design the product architecture, develop backend systems and integrate ML models. This was our solution for the SIH '24 finals.

**Pathfinder, an Algorithm demonstration project** Built a data structures and algorithms project to showcase various algorithms used in real-life pathfinding scenarios. Visualizes pathfinding in a grid after the user specifies the start and stop cells.

## EXTRA-CURRICULAR ACTIVITIES

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- **Smart India Hackathon '24 Finalist** Selected for the finals which was held on 11<sup>th</sup> and 12<sup>th</sup> Dec 2024, the problem statement revolves around Deepfake Detection. We developed a complete end-to-end web application as a solution.
- **Summer Analytics '24 by IITG** Was a part of the annual Summer Analytics Cohort organised by CAC, IIT Guwahati. This helped me develop my skills in Data Science and helped me get started with applying these skills in real-life scenarios. Was ranked in **Top 10 percentile** of learners.
- **Core Committee Member at Manipal Open-Source Society and ACM, Manipal** Have organised multiple events and workshops hosting 100+ participants. Worked in a team and managed events. These events gave me a platform to deliver my skills in web development while also helping me work in a production environment.
- **Amazon Machine Learning Summer School '24** Was a part of the Machine Learning Summer School organized by Amazon India. Explored various topics such as Supervised and Unsupervised Learning, Deep Neural Networks, Dimensionality Reduction, Generative AI and LLMs, Sequential Learning, Causal Inference, and Reinforcement Learning.

## PUBLICATIONS

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### **CNN-LSTM-Based Nonlinear Model Predictive Controller for Temperature Trajectory Tracking in a Batch Reactor**

ACS Omega · Nov 12, 2024

Aishwarya Selvamurugan, Parthiban Kunnathur Ganesan, **Shashank S Nayak**, Arockiaraj Simiyon\* and Thirunavukkarasu Indiran\*

## TECHNICAL SKILLS

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**Languages:** Python, C++, ASM, HTML/CSS, JavaScript, SQL

**Web Frameworks/Technologies:** Django, Flask, React.js, Node.js, PostgreSQL, MongoDB, MySQL

**ML Frameworks & Tools:** Numpy, Pandas, PyTorch, Scikit-Learn, Matplotlib

**Developer Tools:** Linux, Git, VS Code

**Cloud Technologies:** AWS S3 Bucket, EC2, Github Pages, Amazon RDS for PostgreSQL