

# Akash Kannan

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## EDUCATION

**Rochester Institute of Technology**  
Master of Science - Data Science  
**Vellore Institute of Technology**  
Post Graduate Program – Artificial Intelligence: CGPA: 10/10  
**Vellore Institute of Technology**  
Bachelor of Science – Mathematics and Computing: CGPA: 8.4/10

Rochester, USA  
**Aug 2025 - Dec 2026**  
Bangalore, India  
**Jul 2024 - Jun 2025**  
Chennai, India  
**Sep 2021 - May2024**

## SKILLS

- **Programming & Scripting:** Python, R, SQL, Java, C, C++
- **Machine Learning & AI:** Machine Learning, Deep Learning, Reinforcement Learning, Natural Language Processing (NLP), Computer Vision, Feature Engineering, Model Evaluation & Validation
- **Libraries & Frameworks:** Scikit-Learn, TensorFlow, PyTorch, Pandas, NumPy, Matplotlib, Seaborn, NLTK, SpaCy, OpenCV
- **Data Analytics & Visualization:** Power BI, Tableau, Excel, Exploratory Data Analysis, Data Mining, Statistical Modelling
- **Databases:** MySQL, SQLite, MongoDB
- **Platforms & IDEs:** Jupyter Notebook, Visual Studio Code, Google Colab, Kaggle
- **Soft Skills:** Adaptability, Teamwork, People Management, Problem Solving, Communication, Analytical Thinking

## Internships & Experience

- Project Intern – IGCAR Kalpakkam** **August 2023-December 2023**
- **Tools and Techniques:** Python, PyTorch, NumPy, MCTS, Minimax, Machine Learning
  - Worked on a project focused on inventing faster algorithms for matrix multiplication using AI and reinforcement learning.
  - Designed a game-playing agent inspired by **AlphaTensor** to explore optimized tensor decompositions.
  - Implemented and analyzed search strategies such as **Monte Carlo Tree Search (MCTS)** and **Minimax** on simplified environments like Tic-Tac-Toe before extending to tensor operations.
  - Collaborated with researchers in the AI division and presented findings on algorithmic efficiency.

## PROJECTS

- AutoML Web App with Streamlit** | [Link](#)
- **Tools and Techniques:** Streamlit, Scikit-learn, Pandas, Matplotlib, NumPy, Machine Learning
  - Orchestrated the creation of an interactive AutoML web application enabling seamless uploading of datasets, automatic detection of problem types (classification, regression, or clustering), execution of preprocessing, model training, and result visualization
  - Integrated features like model saving, prediction on new data, and cluster visualization to enhance user experience.
- Automatic Text Summarization using NLP and LLMs** | [Link](#)
- **Tools and Techniques:** Python, NLTK, Pytorch, TF-IDF, T5, LLMs, NLP
  - Developed an extractive summarizer to generate concise summaries from paragraph-level input text.
  - Built a complete NLP pipeline including tokenization, lemmatization, TF-IDF vectorization, and supervised learning.
  - Trained on 50,000 samples from the WikiHow dataset using the **T5 Large Language Model** and evaluated with **ROUGE** metrics for summary quality.
- Smart Billing System using Object Detection (YOLOv8)** | [Link](#)
- **Tools and Techniques:** YOLOv8, Ultralytics, PyTorch, OpenCV, Streamlit, Computer Vision
  - Designed an automated billing system using **YOLOv8** to detect grocery items in real time and compute the total bill dynamically.
  - Enhanced the object detection model on the Freiburg Groceries Dataset, resulting in a significant decrease in lossBuilt a user-friendly interface with Streamlit for visualizing detected items and displaying final bill.
- Cricket Playing XI Prediction using Clustering and Ranking** | [Link](#)
- **Tools and Techniques:** Pandas, Scikit-learn, KMeans Clustering, Random Forest, Matplotlib, Machine Learning.
  - Predicted the **optimal playing XI** for different cricket formats (ODI, T20, Test) based on player performance data.
  - Used **clustering** to group players by roles/skills, and applied a **Random Forest** model to generate a performance-based **ranking**.
  - The final XI was selected based on overall ranking, ensuring role balance and current form.

## CERTIFICATES

- **Basics of Data Science for Metallurgy and Manufacturing – Indian Institute of Metals**  
*Completed: May, 2023*  
Covered foundational data science techniques with a focus on applications in metallurgy and manufacturing, including statistical methods, data-driven process optimization, and industry-specific case studies.