



# Aakash

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## Profile

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AI/ML researcher and software developer with hands-on experience in development, testing, automation, and deep learning projects. Currently pursuing an MTech in CSE-IS at NITK, specializing in AI and ML with a focus on multimodal AI and bringing emotional intelligence to models. Notable academic projects include an Emotion Detection system using the FER 2013 dataset. Passionate about Natural Language Processing (NLP) and Computer Vision (CV), with a strong interest in exploring the intersection of multimodal AI .

## Experience

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**Hashdin by Deloitte | Haryana**  
**SDE-II**

**08/2022 - 08/2024**

### **Automation Using Selenium:**

- Designed and implemented automated testing frameworks using Selenium WebDriver to improve testing efficiency and accuracy.
- Achieved a 60% reduction in manual testing efforts by automating 100+ test cases and ensuring comprehensive coverage.
- Integrated test automation with CI/CD pipelines to ensure seamless deployment and delivery processes.
- Generated detailed test reports to track bug resolutions and maintain high-quality software delivery standards.

### **Developed Intelligent IDE Plugins Using GenAI:**

- Built advanced plugins for IntelliJ, PyCharm, and VS Code leveraging Generative AI (GenAI) and Retrieval-Augmented Generation (RAG).
- Automated code generation and library imports using contextual insights, significantly improving developer productivity.
- Implemented Jira integration to fetch user stories and auto-generate code templates tailored to project requirements.
- Enhanced SQL query generation capabilities based on user prompts, reducing manual query creation time by 40%.
- Focused on simplifying development workflows through advanced prompt engineering and AI-based solutions.

# Project

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## Emotion Detection System Using FER 2013 Dataset

- Built a robust emotion detection system capable of identifying human emotions (happy, sad, neutral, etc.) from images, video files, and live video streams.
- Developed and trained multiple CNN models (Custom CNN, VGG-16, ResNet 50) using the FER 2013 dataset, achieving the best performance with ResNet50.
- Applied advanced data augmentation and transfer learning techniques to enhance model accuracy.
- Deployed a live model on Render and shared the project on GitHub, complete with a detailed PowerPoint presentation.
  - **GitHub Repository:** [Repo Link](#)
  - **Live Model:** [Live model link](#)

## Virtual Assistant Using RASA and Gemini API

- Worked on developing an virtual assistant with multimodal capabilities to process audio, and text inputs.
- Focused on integrating voice verification into the system to enable extra level of security.
- Trained the assistant for task automation, security through voice verification, and personalized responses using Gemini API for advanced scenarios.

## Object Detection Using Deep Learning (Ongoing)

- Developing object detection models using deep learning frameworks, including CNNs, Mask R-CNN, and YOLO algorithms.
- Employing datasets like COCO to achieve high precision and real-time detection capabilities.
- Exploring practical deployment scenarios for real-world applications such as autonomous vehicles and surveillance systems.
- Aiming to achieve precision levels above 90% in real-time detection for use in surveillance and robotics.

# Education

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## National Institute of Technology Karnataka (NITK) | Surathkal

**MTech - Computer Science & Engineering (Information Security)    2023 - Present**

- Completed courses in Deep Learning, Mathematics, and Algorithms.

## Dr. A.P.J. Abdul Kalam Technical University (AKTU)| Lucknow(U.P.)

**BTech - Computer Science & Engineering    2018 - 2022**

- Relevant coursework: Computer Organization and Architecture, Databases, Machine Learning, Cloud Computing, Operating Systems.
- GPA - 8.3 (First Division)

## State Board of High School and Intermediate Education

- **Intermediate (Class 12):** 77.40% | 2017
- **High School (Class 10):** 82.17% | 2015

## Skills

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- **Programming Languages:** Python, C++
- **Frameworks and Libraries:** TensorFlow, Keras, OpenCV, PyTorch
- **AI/ML Expertise:** Machine Learning, Deep Learning, Generative AI (GenAI), Large Language Models (LLM)
- **Tools:** Selenium, Git, Jira, Google Colab
- **Databases:** SQL
- **Cloud Platforms:** Google Cloud (Associate Level), Microsoft Azure (Fundamentals)

## Certification

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- **Python Certification**
  - Demonstrated proficiency in Python programming, covering topics like data structures, algorithms, and object-oriented programming.
- **Google Cloud Certified - Associate Level | [Show Certificate](#)**
  - Gained expertise in deploying and managing scalable cloud solutions.
- **Microsoft Azure Fundamentals (AZ-900) | [Show Certificate](#)**
  - Learned foundational knowledge of cloud services and how Microsoft Azure provides solutions for modern business challenges.
- **ISTQB - Foundation Level | [Show Certificate](#)**
  - Certified in foundational software testing principles and best practices for quality assurance.

## Extracurricular Activities

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### Internship/Placement Coordinator, CSE-IS, NITK:

- Assisted batchmates in securing internships and placements by providing guidance and resolving queries.
- Contributed to the Career Development Centre (CDC) by gathering and organizing information for 50+ companies across various departments and domains.
- Supported CDC operations through invigilation duties and company outreach efforts.

## Publications

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- Currently preparing to publish a research paper exploring the things
- Interested in pursuing Ph.D. opportunities to further explore this domain.