# Rohan Kailash B

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Rohan-Kailash | RohanKailash

## Experience

- **Xerago [🌐]** *July 2025 – Sep 2025*
  *AI Intern – AI Engineering Team* Chennai, Tamil Nadu
  - Authored detailed **Product Requirement Documents (PRD)** and **Technical Architecture Documents (TAD)** for AI-driven solutions, ensuring clarity and alignment with business objectives.
  - Leveraged advanced AI tools, including **Cursor AI** and other generative AI platforms, to accelerate **AI-assisted development workflows**, improving productivity and reducing development time.
  - Proposed a **Machine learning based** algorithm for one of the products as an alternative to traditional LLMs, improving performance efficiency by 20% and cost-effectiveness

- **Ericsson India Pvt. Ltd. [🌐]** *Feb 2025 – July 2025*
  *AI Research Intern* Bengaluru, Karnataka
  - Conducting research on **tokenization evaluation for language-based embedding models**, analyzing the impact of tokenization strategies on embedding quality and retrieval performance.
  - Evaluated impact of acronym obfuscation in **QA retrieval** using SBERT and multiple (pretrained, fine-tuned, and PT-FT) models; observed a 10–20% drop in accuracy depending on architecture and training stage.
  - Presented *"Investigating Continual Pretraining in LLMs"*, demonstrating perplexity reduction and improved downstream task performance; compared encoder-decoder vs decoder-only setups.
  - Coordinated 30+ speaker sessions at Ericsson Developer Conference 2025, ensuring seamless execution.

- **ZOHO Corporation [🌐]** *Aug 2023 – Nov 2023*
  *Summer Internship – Software Testing Intern* Chennai, Tamil Nadu
  - Developed skills in programming and databases from **multithreading** to writing **sub-queries**, particularly in **Java and MySQL**.
  - Contributed to the **alpha release** of a BI app by fixing critical bugs, verifying feature completeness, and proposing **3+ UX features** inspired by **Zoho Analytics**.
  - Created **5+ diverse datasets** for testing purposes, improving coverage and reliability.

## Skills

- **Languages:** Python, Java, SQL, HTML5, CSS3
- **AI/ML Frameworks:** Scikit-learn, TensorFlow, HuggingFace Transformers, SHAP, SMOTE, YOLOv8
- **Data Processing & Visualization:** Pandas, NumPy, Matplotlib, Seaborn
- **Computer Vision:** OpenCV, MediaPipe, Streamlit
- **Tools & Platforms:** Git, ROS Noetic, Arduino, Google Colab, Jupyter Notebook, Cursor
- **Database:** MySQL

## Certifications

- **Spoken Tutorial - Java**, IIT Bombay — View Certificate
- **Spoken Tutorial - Python**, IIT Bombay — View Certificate
- **Spoken Tutorial - MySQL**, IIT Bombay — View Certificate

## Education

- **Vellore Institute of Technology** *2021 - 2025*
  *BTech in Computer Science and Engineering (Specialization in AI and Robotics)* Chennai, Tamil Nadu
- **Modern Senior Secondary School** *Graduated May 2021*
  *Grade XII: Computer Science Percentage* Chennai, Tamil Nadu

## PROJECTS

- **Drone Guard** *March 2024*
  *Tools: Python, Streamlit, TensorFlow, OpenCV* [GitHub]
  - Drone Map Stitcher and Image Segmentation in a **Streamlit** app for **flood monitoring in disaster zones**
  - Developed a drone image stitching tool for generating comprehensive maps to aid **disaster response**.
  - Built a custom-trained **YOLOv8** model for **water body segmentation** and visualization.
  - Displayed **segmented water bodies** with **coordinates** for precise **flood monitoring**.
  - Designed the app to integrate into future **autonomous drone systems** for streamlined operations.

- **Alzheimer's Disease Progression Prediction using MRI Biomarkers** *Jan 2025 – Apr 2025*
  *Tools: Python, Scikit-learn, SHAP, SMOTE, RFE* [GitHub]
  - Processed **5,000+ longitudinal MRI scans** from the **ADNI dataset**; engineered **delta-based biomarkers** to capture **neurodegenerative trends**.
  - Tackled **severe class imbalance** (**68 vs. 2,000+ samples**) using **SMOTE and class weighting**, improving **minority class recall by 30%**.
  - Trained and evaluated **Random Forest, SVM, and Logistic Regression** models, achieving up to **92.3% accuracy** in predicting **pMCI** $\rightarrow$ **AD progression**.
  - Applied **Recursive Feature Elimination (RFE)** and **SHAP** analysis to reduce **300+ biomarkers** to **top 10 per class**, boosting **interpretability** while maintaining **>90% accuracy**.
  - Validated results via **10-fold cross-validation**; demonstrated **clinical relevance** of selected features for **early intervention and stability detection**.

## EXTRACURRICULAR ACTIVITIES

- **VIT United Chess Team** *2021 – Present*
  *Team Member, ELO 1781* VIT Chennai
  - Won a National U-1600 ELO chess tournament; represented VIT in the **Collegiate Chess League**, securing **2nd place globally**.
  - Featured in VIT Chennai's **SCOPE (School of Computer Science Engineering) Achievers List** for international representation and tournament performance.

- **Robotics Club** *2023 – 2024*
  *Member, AI Programming Track* VIT Chennai
  - Co-organized multi-level Arduino + 3D printing workshops; collaborated across technical and marketing teams to drive 100+ student participation.
  - Built and tested small-scale AI/robotics projects using **OpenCV and ROS Noetic** under faculty mentorship.