



# DATA SCIENCE & AI/ML INTERNSHIP

## Internship Outcome

- Understand and define real-world ML problems
- Work with datasets: acquisition, cleaning, EDA & feature engineering
- Build baseline, tuned, and advanced ML models
- Deploy models using APIs and prepare for MLOps workflows
- Present, document, and showcase an end-to-end ML project



## Key Deliverables

1 - Project Charter defining problem, success metrics & stakeholders  
 2 - Cleaned + Feature-Engineered dataset  
 3 - Baseline, Tuned & Advanced ML Models

4 - Experiment Tracking Reports & Comparison Tables  
 5 - Robustness & Error Analysis Reports  
 6 - Serialized Model + API Deployment Package (Flask/FastAPI)

7 - Dockerfile + requirements.txt (optional)  
 8 - Model Card + Complete GitHub Repository  
 9 - Final Report + Final Presentation Deck

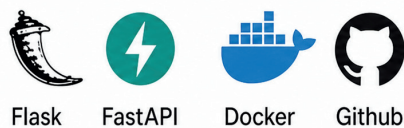
### Programming & Data Tools



### Modeling & ML Frameworks



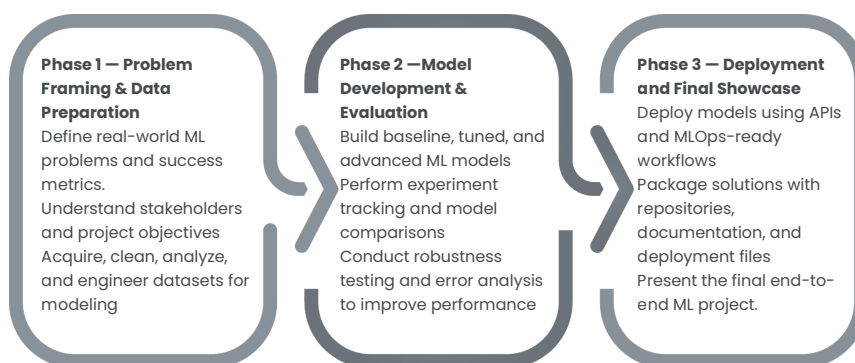
### Deployment & MLOps Tools



### Visualization Tools



## Internship Phases



### Phase 1: Problem Framing & Data Preparation

- This phase focuses on building a strong foundation in machine learning problem-solving and data understanding.
- Interns begin by identifying real-world business and community challenges, translating them into structured ML problem statements, and defining measurable success metrics.
- Interns gain exposure to stakeholder analysis, requirement gathering, and project objective alignment to ensure solutions are practical and outcome-driven.
- By the end of this phase, participants develop a strong understanding of the complete data preparation lifecycle and its importance in building reliable AI systems.

### Phase 2: Model Development & Evaluation

- This phase is dedicated to designing, building, and optimizing machine learning models using industry-standard workflows.
- Interns start by developing baseline models to establish performance benchmarks before progressing to tuned and advanced machine learning algorithms. The program includes supervised and unsupervised learning techniques such as regression, classification, clustering, recommendation systems, and ensemble methods.
- Interns also learn experiment tracking, model versioning, and comparison strategies to evaluate multiple approaches efficiently. Emphasis is placed on hyperparameter tuning, cross-validation, feature selection, and performance optimization.
- Additionally, interns conduct robustness testing, bias detection, and error analysis to improve model accuracy, fairness, and reliability. This phase enables participants to understand not only how to build models, but also how to critically evaluate and improve them for real-world applications.

### Phase 3: Deployment & Project Showcase

- The final phase focuses on transforming machine learning solutions into production-ready applications and professionally showcasing project outcomes. Interns learn how to deploy trained models using APIs, integrate them into applications, and prepare systems for MLOps workflows including monitoring, scalability, and model maintenance. Interns also work with deployment tools, environment management, serialization techniques, and repository structuring for collaborative development.
- Alongside deployment, the phase emphasizes documentation, reporting, and presentation skills essential for industry readiness. Interns prepare technical reports, deployment packages, GitHub repositories, and presentation decks that clearly communicate the project lifecycle, methodologies, results, and business impact.
- The program concludes with a complete end-to-end ML project showcase, enabling participants to demonstrate both technical expertise and professional communication skills suitable for internships, research opportunities, and industry roles.

# WHY CHOOSE THIS INTERNSHIP



Built for Final-Year Students



Hands-On Learning at Innovation Hubs



Real-World Project Experience



Career-Ready Outcomes



Industry-Relevant Curriculum

## APPLICATION PROCESS

The Data Science and AI/ML Internship is available to VTU-affiliated college students through the official VTU Internship Portal.



## Our Locations

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Mysore Road  
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