

# NIEL ABHISHEK J DAVID

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## PROFESSIONAL SUMMARY

Computer Science Engineering student with hands-on experience in software testing, full stack development, cybersecurity, and AI/ML implementations. Proven expertise in test automation, cloud-native application development, machine learning model deployment, and security testing. Demonstrated ability to integrate DevOps practices, implement CI/CD pipelines, and develop scalable microservices architectures across diverse technology stacks.

## Experience

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- ❖ **Intern | Indian Institute of Science (IISc), Bengaluru** **Feb 2025 – May 2025**
    - Developed "MagicMirror<sup>2</sup>", an AI-powered personalized fashion advisor using OpenCV and TensorFlow.
    - Built recommendation system for outfits based on weather, occasion, and user preferences.
    - Integrated Firebase for user authentication and Google Cloud for hosting and scalability.
    - Integrated Gemini LLM and OpenCV/ArcFace for personalized UX; set up A/B testing for behavior modeling.
    - Developed cloud-connected CI/CD pipelines.
  - ❖ **Test Engineer | Ducom Instruments, Bengaluru** **Feb 2022 – Sept 2022**
    - Designed and automated data pipelines for lab instrumentation software using Python, significantly reducing manual QA effort.
    - Conducted manual and automated validation ensuring ISO/ASTM standard compliance.
    - Worked on cross-functional teams for system troubleshooting, reporting bugs, and verifying fixes.

## Projects

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- ❖ **MagicMirror<sup>2</sup> | AI-Powered Smart Mirror**  
**Tech Stack:** Flask, React.js, WebSockets, Gemini LLM, OpenCV, ArcFace, Firestore, Firebase Storage
    - Modular microservices with secure facial recognition and real-time WebSocket streams.
    - Implemented **computer vision algorithms** for user identification.
    - Enabled family-based profiles storing gender, body shape, preferred styles, and wardrobe data.
    - Integrated real-time image processing with WebSockets and OpenCV for background removal.
    - Implemented metadata tagging, dynamic upload to Google Drive, and catalog display using Firestore.
  - ❖ **Fashion Recommendation System**  
**Tech Stack:** TensorFlow, PyTorch, EfficientNetB3, Flask, SQLAlchemy, MLflow, AWS, Ensemble Learning
    - Classified user body shapes with high accuracy using CNN models like VGG16, DenseNet & EfficientNet.
    - Integrated a virtual try-on system using ARToolkit, enabling users to visualize outfits in real-time.
    - Connected with AmazonAPI to dynamically fetch and recommend clothing items tailored to the user's body type
    - Implemented keyword-based search and filtering logic to display relevant fashion items aligned with body shapes and dressing styles.
  - ❖ **Smart Infrastructure Monitoring & Self-Healing System**  
**Tech Stack:** Python, PowerShell, Node.js, MongoDB, Docker, Jenkins, AWS CloudWatch, Active Directory
    - Built a real-time monitoring solution for enterprise systems to track resource usage, service status, and failed logins. Integrated auto-remediation scripts using PowerShell and Python for self-healing of common issues like service crashes and memory spikes.
    - Designed a web dashboard for live alerts and connected it with AWS CloudWatch for escalations. Enabled secure role-based access with Active Directory integration.

## ❖ **Cloud-Based Attendance System**

**Tech Stack:** Django, React.js, AWS S3/RDS, CI/CD, GitHub Actions, Jenkins, Pytest

- Created secure attendance platform with microservices architecture and RBAC authentication.
- Implemented comprehensive testing framework achieving 90% code coverage.
- Cloud-native solution automating attendance tracking with secure access and real-time updates.

## ❖ **E-commerce Fraud Detection System**

**Tech Stack:** Python, TensorFlow, Scikit-learn, XGBoost, Apache Kafka, PostgreSQL

- Engineered a real-time fraud detection platform using anomaly detection and supervised ML for transaction monitoring.
- Developed Kafka-based streaming system with feature engineering pipelines and ensemble models for accuracy.
- Integrated PostgreSQL dashboard, Jenkins pipelines, and real-time alerting for proactive fraud prevention.

## Education

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### ❖ **B.Tech in Computer Science Engineering**

PES University, RR Campus, Bengaluru

**Jan 2023 – Present**

**CGPA:** 7.61/10

## Technical Skills

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- **Programming Languages:** Python, Java, JavaScript, TypeScript, C++, SQL, R, Bash
  - **Frontend Development:** React, HTML, CSS, Bootstrap, Angular
  - **Backend Development:** Node.js, .NET Core, Flask, Django, Express.js, REST APIs.
  - **Cloud:** AWS (EC2, RDS, Lambda, S3), GCP, Firebase, Azure (Basics)
  - **Database Technologies:** MySQL, PostgreSQL, MongoDB, SQLAlchemy, Firebase Realtime Database
  - **Machine Learning & AI:** TensorFlow, PyTorch, Scikit-learn, Keras, Natural Language Processing, Computer Vision, Deep Learning, Neural Networks, OpenCV, Hugging Face Transformers, Large Language Models
  - **Cybersecurity Tools:** Wireshark, OWASP ZAP, Burp Suite, Penetration Testing
  - **DevOps & Automation:** Docker, Jenkins, Selenium, Postman, Pytest, SNMP, GitHub Actions, CI/CD Pipelines.
  - **Infrastructure/Support:** Active Directory, Office 365, Windows 10/11, PowerShell, VPN, Basic Networking, Remote Tools

## Certifications

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- Beginner's guide to Linux Kernel Development. ([Certificate](#))
  - AWS educate Introduction to Cloud.( [Storage](#), [Compute](#), [Serverless](#) )
  - Jira Work Management Fundamentals Badge.([Atlassian University](#))

## Achievements

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- Silver Medalist – IndiaSkills Regional 2021 (Industrial Control)
  - 6th Place – IndiaSkills National 2022 (Industrial Control)
  - Gold Medalist – Karnataka Skills State 2021 (Industrial Control)
  - 8th Place – Kalpana Hackathon: Developed a disaster tracking and resource coordination system