NIEL ABHISHEK J DAVID

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LinkedIn GitHub Portfolio

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

❖ ***Intern | Indian Institute of Science (IISc), Bengaluru*** ***Feb 2025 – May 2025***

- Developed "MagicMirror²", 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***

- Developed Python automation scripts for data extraction and visualization, reducing report time by 40%
- Enhanced analysis precision by 15% with statistical tools, ensuring ISO/ASTM compliance.
- Collaborated with developers to improve QA coverage, implementing validation for complex logic and UI workflows to ensure robust software delivery

Projects

❖ **MagicMirror² | AI-Powered Smart Mirror** 🔗 View Code on GitHub

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** 🔗 View Code on GitHub

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.

❖ **Advanced Sentiment Analysis System with Deep Learning**

Tech Stack: Python, PyTorch, BERT Transformers, TensorFlow, Flask, Docker, AWS EC2, NLTK, SpaCy

- Built a sentiment analysis platform with deep learning models (CNN, BiLSTM, BERT) and NLP pipelines using NLTK and SpaCy.
- Fine-tuned model performance through hyperparameter optimization and transfer learning techniques.
- Deployed Flask API via Docker on AWS EC2 with Nginx for scalable real-time inference and monitoring.

- **Cloud-Based Attendance System** 🔗 View Code on GitHub

  Tech Stack: React.js,Node.js, Firebase Auth/Cloud firestore, CI/CD, GitHub Actions, Jenkins, Pytest
  - Built a responsive school attendance system with secure login, real-time updates via Firebase Firestore, and student profile management.
  - Implemented a modular backend with RBAC authentication and analytics dashboard to visualize attendance patterns.
  - Achieved 90% test coverage using Pytest and automated deployments through CI/CD pipelines with Jenkins and GitHub Actions.

- **E-commerce Fraud Detection System** 🔗 View Code on GitHub

  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

- ***B.Tech in Computer Science Engineering*** ***Jan 2023 – Present***

  PES University, RR Campus, Bengaluru ***CGPA***: 7.73/10

Technical Skills

- **Programming Languages:** Python, Java, C++
- **Frontend Development:** React.js, Bootstrap, HTML/CSS, JavaScript, TypeScript
- **Backend Development:** Node.js, Express.js, Flask, Django, JDBC, Hibernate, Spring
- **Cloud Platforms:** AWS (EC2, S3, Lambda, RDS)
- **Databases:** MySQL, MongoDB, PL SQL
- **Machine Learning & AI:** TensorFlow, PyTorch, Scikit-learn, Keras, NLP, OpenCV, BERT, Transformers, MLflow
- **Cybersecurity Tools:** Wireshark, OWASP ZAP, Burp Suite, Penetration Testing
- **DevOps & Testing:** Jenkins, CI/CD Pipelines, Docker, Selenium, GitHub actions, Pytest
- **Version Control & Collaboration:** Git, GitHub, GitLab, JIRA, Agile, Scrum, A/B Testing

Certifications

- Linux Kernel Development. (Certificate)
- AWS educate – Introduction to Cloud.(Storage, Compute, Serverless)
- Jira Work Management Fundamentals – (Atlassian University)
- JSpiders JAVA Full Stack + GenAI Course.

Achievements

- 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