KATHERINE OLIVIA R

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INTERNSHIP EXPERIENCE

ZOHO CORP | SDE INTERN (SUMMER INTERN'25) |(**certificate**)
May 2025 – June 2025 | Onsite - Chennai, TN

- **Project:** Cloud Infrastructure & Traffic Analysis (**Site24x7** Team, **ManageEngine**)
- **Objective:** Monitor and analyze cloud infrastructure traffic using **AWS services** to enhance network observability.
- **Approach:** Built a **Network Flow Monitor** using **VPC Flow Logs**, **CloudWatch Logs Insights**, and **Reachability Analyzer** to analyze internal EC2 traffic
- **Outcome:** Automated traffic analysis and reporting, identified blocked/allowed flows, **automated** log parsing via Java SDK and AWS CLI, cutting manual effort by **80%**
- Secured access with **IAM**, enabled auditing via **CloudTrail**, and visualized anomalies with CloudWatch Dashboards
- **Tech Stack:** AWS (EC2, VPC, CloudWatch, IAM, IGW, TGW), Java, Maven, CloudWatch Logs Insights, GCP, Microsoft Azure

INDIAN INSTITUTE OF TECHNOLOGY (IIT HYDERABAD)
RESEARCH INTERN (SUMMER'25) – Data Science (offer letter)
(Ongoing) June 2025 – July 2025 | Onsite – IIT Hyderabad, Telangana

- **Project: IITH Technology Research Park and foundation, Centre of Excellence-Financial Technologies** (Data Science team).Part of a government-partnered research team for Tamil Nadu, West Bengal, Gujarat & Punjab working on **GST/VAT analytics and tax filing dashboards**, **Fraud Prediction.**
- Analyzing financial data to extract trends in tax compliance to identify sector-wise anomalies, building a Credit Card Fraud Prediction model to predict fraudulent transactions using **XGB**.

AICTE-TECHSAKSHAM (A MICROSOFT & SAP Initiative) | AI INTERN
December 2024 – March 2025 | Online | (certificate link)| (project link)

- Developed a **human pose estimation system** using **MediaPipe** and **OpenCV DNN**, integrating deep learning models for multi-point keyframe detection in real-time and static frames
- **Tech Stack:** Python,OpenCV,TensorFlow,MediaPipe, Streamlit

PROJECTS

INTERNAL TRAFFIC FLOW ANALYZER |May 2025 – June 2025|(link)

- **Objective:** Monitor and analyze internal AWS traffic between any two ENI/ EC2/ IPs across subnets or AZs
- **Features:** Flow log ingestion, ACCEPT/REJECT classification, Reachability Analyzer path tracing (visualization), CloudWatch-based anomaly alerts.
- **Tech Stack:** AWS (EC2, ENI, VPC, Flow Logs, Logs Insights, Reachability Analyzer, IAM, CLI), Java, Python (Boto3), Bedrock.

CREDIT CARD FRAUD DETECTION | June 2025 – July 2025 | (link)

- **Objective:** Detect fraudulent transactions from a real-world dataset of over **2.4 crore records** using advanced ML algorithms and tuning techniques.
- **Features:** Applied **XGBoost, AdaBoost, CatBoost**, and handled class imbalance with **SMOTE**; tuned hyperparameters using **Hyperopt, Optuna**, and **GridSearchCV**; achieved ~**95% precision** with high **accuracy, recall, and F1-score** for class 0.
- **Tech Stack:** Python, Pandas, Scikit-learn, XGBoost, CatBoost, Optuna, Hyperopt, SMOTE, Matplotlib, Seaborn

COZY CUPS WEBSITE |February 2025|(link)|

- Built a **responsive** multi page website for an eatery in Chennai using **React.js, Node.js, Tailwind CSS**

EDUCATION

SHIV NADAR UNIVERSITY, CHENNAI
BTech- Artificial Intelligence and Data Science – 3rd Year | July 2027 |
CGPA: 8.05/10 (up to 3rd semester)
Student Ambassador of university

COURSEWORK

Data Structures & Algorithms
Cloud Computing
Java, Python, C++, C
Object Oriented design, DBMS
Operating Systems
Design & Analysis of Algorithms
Computer Architecture
Artificial Intelligence
Machine Learning
Data Science
Data Mining,EDA
Statistical Inference

TECHNICAL SKILLS

LANGUAGES & DATABASES

- Python3 and standard libraries (PyTorch, TensorFlow, Sci-kit learn)
- Java, JavaScript, C, C++
- SQL (MySQL, SQLite), NoSQL (MongoDB)

WEB DEVELOPMENT & FRAME- WORKS

- HTML5, CSS3, JavaScript (ES6+)
- React.js, Node.js, Vue.js
- Flask, Django
- Bootstrap, Tailwind CSS

CLOUD & DEVOPS

- Amazon Web Services (EC2, VPC, S3, IAM, CloudWatch, Bedrock)
- Microsoft Azure, Google Cloud Platform (GCP)
- Docker & Kubernetes, Kafka

VERSION CONTROL & TOOLS

- Git, GitHub
- Tableau, Power BI
- Vercel, Google Colab
- JDK, VS Code, Jupyter Notebook

LINKS & CERTIFICATIONS

- AWS AI/ML Scholar' 25, Preparing for AWS Certified Solutions Architect
- Postman API Student expert
- Machine Learning specialization by DeepLearning.AI, Stanford online
- SheFi Scholar' 25
- Girlscript Summer of Code'25
- Github : Katherine-Olivia
- Leetcode : kathy (200+ problems solved)