Natnael Girma

Software Engineer

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Experienced senior backend developer and machine learning engineer proficient in designing scalable APIs, integrating databases, and developing predictive models. Skilled in Python, Flask, Django, TensorFlow, and computer vision technologies. Strong track record in leading projects, implementing secure systems, and delivering impactful solutions.

EDUCATION

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY | Adama, Ethiopia

BS.c - Software Engineering July 2022 /2021 - present

WORK EXPERIENCE

Backend Developer | Ozone Technology PLC

Jul 1, 2024 - Present / Addis Ababa,Ethiopia

Developed a School Administration Web Application:

- Focused on backend development, including creating and testing APIs, designing database models, and integrating databases.
- Implemented customizable dashboards, comprehensive reporting, and secure user authentication.
- Managed student records, attendance tracking, grading, and financial operations.
- Facilitated communication through announcements and notifications.
- Achieved an 80% success rate in project tasks.

- ***Built a Student, Family, and Teacher Mobile Application:***

  - Provided user-friendly access to profiles, schedules, academic progress, and course materials.
  - Enabled attendance notifications, messaging, and school calendar viewing.
  - Managed class rosters, attendance, grades, and communication for teachers.

Software Engineer | ICPC

Noc 14, 2023 - Jun 1, 2024 / Addis Ababa,Ethiopia

- Led the design, development, and maintenance of critical backend systems, resulting in substantial improvements in application performance, scalability, and reliability.
- Implemented robust APIs and optimized database models to ensure efficient data management and seamless integration across various components.
- Collaborated with cross-functional teams to identify system requirements and address technical challenges, ensuring timely and effective delivery of backend solutions.

- Leveraged cloud-based services and scalable infrastructure to support the growing user base and increasing data volume, ensuring the system's long-term sustainability.

Machine Learning Engineer | CodeAlpha | Internship

Jun 25, 2024 - Sep 15, 2024 / Lucknow, Uttar Pradesh India

- Developed and optimized machine learning models using Python and libraries like TensorFlow, Keras, and scikit-learn.
- Preprocessed and analyzed large datasets to improve model accuracy and extract meaningful insights.
- Conducted model evaluation and validation using cross-validation techniques and performance metrics.
- Documented project findings and methodologies in detailed reports and presented results to stakeholders.

PROJECTS

Machine Learning Project: Earthquake Prediction

- Developed an earthquake prediction model using Python and machine learning frameworks such as TensorFlow, Keras, and scikit-learn.
- Implemented decision trees, random forests, and neural networks to predict earthquake occurrences.
- Collected and preprocessed seismic data, applying feature engineering to enhance model performance.
- Conducted model evaluation using metrics like accuracy, precision, and recall, and visualized results with Matplotlib and Seaborn.

Machine Learning Project: Stock Price Prediction

- Developed and optimized stock price prediction models using Python and machine learning frameworks such as TensorFlow, Keras, and scikit-learn.
- Implemented algorithms like linear regression, LSTM, and ARIMA for time series forecasting, enhancing model accuracy through feature engineering.
- Evaluated model performance using metrics such as RMSE and MAE, and effectively presented findings with data visualization tools like Matplotlib and Seaborn.

Computer Vision Project: Ball Movement and Color Detection

- Developed a computer vision system using Python, OpenCV, and YOLOv8 to detect and track ball movement and identify colors (white, green, red, yellow).
- Implemented real-time object detection and tracking algorithms to accurately monitor ball positions and movements on a table.
- Enhanced system performance by optimizing image processing techniques and integrating machine learning models for robust color detection.

SKILLS

Backend Development:

- ***Programming Languages:*** Python, JavaScript,Java and C++
- ***Web Frameworks:*** Flask, Django, Express, Angular,RMI,Spring Boot
- ***API Development:*** Designing, developing, and testing RESTful APIs
- ***Database Management:*** SQL (MySQL, PostgreSQL), NoSQL (MongoDB)
- ***Authentication and Authorization:*** Implementing secure authentication (OAuth, JWT) and role-based access control (RBAC)
- ***Microservices Architecture:*** Designing and developing scalable backend systems

Machine Learning and Data Science:

- ***Languages:*** Python (NumPy, Pandas, Scikit-learn)
- ***Frameworks:*** TensorFlow, Keras, PyTorch
- ***Model Deployment:*** Building and deploying machine learning models in production environments
- ***Feature Engineering:*** Preprocessing and transforming data for model training
- ***Model Evaluation:*** Evaluating model performance using metrics like RMSE, MAE, accuracy, precision, and recall
- ***Deep Learning:*** Implementing neural networks, CNNs, RNNs for complex data analysis tasks

Computer Vision:

- ***Libraries:*** OpenCV, YOLOv8
- ***Object Detection and Tracking:*** Developing real-time object detection and tracking systems
- ***Image Processing:*** Implementing algorithms for image enhancement and feature extraction
- ***Color Detection:*** Detecting and analyzing colors in images for various applications

Project Management and Collaboration:

- ***Agile Methodologies:*** Scrum, Kanban
- ***Version Control:*** Git, GitHub
- ***Documentation:*** Writing technical documentation and reports
- ***Team Collaboration:*** Working effectively in cross-functional teams to achieve project goals