

# Muhammad Abdullah Aish

## Python | Backend Engineer

**Email:** [abdullahaish7@gmail.com](mailto:abdullahaish7@gmail.com) | **Phone:** +92-321-408-3670 | **Portfolio:** [www.abdullahaish.com](http://www.abdullahaish.com)

**LinkedIn:** [linkedin.com/in/abdullahaish](https://linkedin.com/in/abdullahaish) | **GitHub:** [github.com/abdullahaish](https://github.com/abdullahaish)

### Professional Summary

Backend Engineer with 4+ years of experience building scalable, secure, and high-performance systems in FinTech, EdTech, and enterprise SaaS. Proficient in Python, Django, FastAPI, and Flask, with a strong background in RESTful API design, ETL pipelines, and cloud-native development (AWS, Docker, Kubernetes). Adept at integrating AI/ML models into production systems, optimizing database performance, and delivering features in Agile/Scrum environments. Committed to writing clean, testable code and driving continuous improvement across teams.

### Technical Skills

- **Languages:** Python
- **Backend Frameworks:** Django, Flask, FastAPI
- **Databases:** PostgreSQL, MySQL, MongoDB
- **Data Engineering:** ETL Pipelines, Databricks, Airbyte, Snowflake, Apache Spark, Kafka
- **Machine Learning:** TensorFlow, PyTorch, Scikit-learn, Natural Language Processing (NLP), Large Language Models (LLMs)
- **Cloud & DevOps:** AWS, Azure (basic exposure), Docker, Kubernetes, Jenkins, CI/CD
- **Code Quality:** SonarQube, flake8, pylint, pre-commit hooks
- **Development Methodologies:** Agile, Scrum, TDD
- **Enterprise & Tools:** ERP, CRM, API integrations, Business Intelligence

### Work Experience

#### System Analyst | RedMath | Jan 2023 - Present

- Designed and optimized scalable RESTful APIs using FastAPI and Django.
- Deployed backend services via Docker on AWS, with flexibility for Azure-based infrastructures.
- Led the end-to-end development of AI-driven backend systems for financial data analytics.
- Collaborated with ML engineers to integrate and deploy models for real-time insights and automated valuations.
- Built scalable ETL pipelines to ingest, transform, and process large volumes of structured financial data.
- Participated in system architecture discussions and contributed to cross-functional technical decisions.
- Automated code quality checks using SonarQube, flake8, and pre-commit hooks integrated into CI workflows.
- Fostered an agile, innovation-driven culture focused on system reliability, experimentation, and continuous improvement.

#### Software Engineer | Mezino Technologies (Deployed at RedMath) | Jan 2023 - July 2024

- Developed backend services using Django REST Framework and FastAPI for large-scale EdTech systems.
- Built AI-integrated features involving real-time video processing and behavioral anomaly detection.
- Implemented asynchronous data pipelines using Redis and stored insights and metadata in MongoDB.

- Created secure, scalable APIs with Role-Based Access Control (RBAC), JSON Web Token (JWT) authentication, and request throttling.
- Optimized backend performance through MySQL query tuning and efficient indexing.
- Maintained high code quality by integrating SonarQube, flake8, GitHub Actions, and Jenkins into CI/CD pipelines.

### Software Engineer & Data Scientist | Rapid Plus Solutions | June 2021 - Dec 2022

- Designed and developed a custom AI-powered analytics module using Django REST Framework and machine learning workflows.
- Built and deployed predictive models to support business intelligence and automation.
- Created scalable RESTful APIs to serve model predictions and insights.
- Collaborated with cross-functional teams to integrate ML models into production systems.
- Contributed to end-to-end development of AI-driven business solutions for client-facing platforms.
- Built and deployed ML models for credit risk assessment and fraud detection, using Random Forests and XGBoost for prediction and anomaly detection.

### Education

- Master of Science in Data Science.
  - The Superior University, 2023-2025
- Bachelor of Science in Computer Science.
  - National College of Business Administration & Economics, 2018-2022

### Projects

- **Valutico – Financial Valuation Platform:**

Valutico is a leading AI-powered business valuation platform that helps financial analysts, advisors, and corporate finance teams perform company valuations with speed, consistency, and accuracy. It combines financial data aggregation, automated valuation models, and intelligent reporting to streamline how professionals assess enterprise value reducing dependency on manual spreadsheets and complex modeling.

- Designed and implemented high-performance backend APIs using FastAPI and Sanic, automating key valuation workflows such as data retrieval, normalization, and model execution.
- Integrated AI and machine learning models for financial forecasting, data enrichment, and peer analysis to improve valuation precision and reduce turnaround time.
- Developed scalable ETL pipelines leveraging Airbyte, Apache Spark, and Snowflake, ensuring seamless ingestion and transformation of large, multi-source financial datasets.
- Architected microservice-based data processing systems to handle valuation requests, reporting jobs, and analytics tasks concurrently with high availability.
- Deployed, containerized, and orchestrated microservices on AWS using Docker and CI/CD pipelines built in GitHub Actions, ensuring consistent and automated deployments.
- Collaborated closely with finance and valuation experts to digitize and optimize DCF, Comparable Company, and Transaction Multiple models into efficient APIs.
- Enhanced platform reliability by integrating structured logging, error monitoring, and real-time dashboards with Grafana and Sentry for proactive issue detection and performance tracking.
- Tech Stack: Python · FastAPI · Sanic · PostgreSQL · Airbyte · Apache Spark · Snowflake · Docker · AWS · GitHub Actions · Grafana · Sentry.

- **rSuite – EdTech Platform:**

rSuite is a modular EdTech platform developed by RedMarker that powers large-scale digital assessments, automated evaluation, and online examination systems used by educational institutions across Pakistan. It offers an integrated suite of tools for item banking, computer-based testing, and on-screen marking, ensuring transparency, security, and efficiency in digital exams. The system supports multilingual assessments, role-based permissions, and seamless analytics for both teachers and administrators.

- Architected and maintained backend services for a suite of integrated applications used by thousands of students and administrators.
- **rCBT:** Built APIs and business logic for managing computer-based exams with automated grading, time-bound sessions, and student access control.
- **rProctor:** Developed an AI-powered proctoring system by integrating RTMP live video streams and real-time AI models to detect cheating behaviors (e.g., multiple faces, mobile phone usage, abnormal movements).
  - Used OpenCV, TensorFlow, and PyTorch for frame analysis and behavioral anomaly detection.
  - Employed Redis for asynchronous processing pipelines and GPU acceleration for real-time inference.
  - Leveraged MongoDB to store AI detection logs, stream metadata, user sessions, and evidence snapshots for auditing and post-exam review.
- **rTestGen:** Developed dynamic paper generation APIs, enabling educators to create randomized or custom exams with difficulty levels, topic-based filtering, and structured templates.
- **rMarker:** Implemented backend workflows for evaluating subjective and objective exams, including rubric-based scoring, examiner assignment, and results processing.
- **rPayment:** Created secure, robust payment APIs with invoice generation and integrated Easypaisa gateway for seamless fee collection and real-time transaction validation.
- Implemented role-based access control (RBAC), JWT authentication, and API throttling to enhance platform security and performance.
- Designed modular microservices architecture for maintainability, horizontal scalability, and seamless CI/CD deployment.
- Optimized MySQL queries and indexing for improved response times and high-throughput operations across services.
- Automated code linting, formatting, and quality enforcement using pre-commit hooks, flake8, and SonarQube, integrated into CI/CD pipelines.
- Collaborated with frontend and QA teams to deliver new features in agile sprints, conducted code reviews, and ensured high code quality with flake8, pre-commit hooks, and SonarQube.
- Achieved < 200ms average API response time under exam-day load testing scenarios with over 10,000 concurrent users.
- Tech Stack: Django REST Framework · FastAPI · MySQL · MongoDB · Docker · AWS · GitHub Actions · JWT · SonarQube · flake8.

- **Hundred Tags – High-Risk Merchant Payment Platform:**

A secure payment-processing platform built for high-risk merchants, enabling instant onboarding, transparent pricing, and integration with major e-commerce and POS systems. Designed to support industries often rejected by traditional payment processors.

- Developed and deployed backend APIs for merchant onboarding, KYC verification, and payment routing using Django REST Framework and FastAPI.
- Implemented risk-scoring and fraud-detection modules to identify suspicious merchant activity and improve transaction approval accuracy.

- Built scalable microservices with Docker, PostgreSQL, and AWS (EC2, RDS, S3) for high availability and fault tolerance.
  - Designed merchant dashboards to monitor onboarding status, chargebacks, settlement reports, and key performance analytics.
  - Integrated multiple payment gateways and acquiring banks, ensuring real-time status updates and fallback routing for failed transactions.
  - Automated merchant onboarding workflow, reducing manual review time from days to hours.
  - Collaborated with the frontend team to expose secure REST APIs for the landing portal and merchant dashboard, ensuring robust authentication (JWT, RBAC).
  - Tech Stack: Django / FastAPI · PostgreSQL · AWS · Docker · REST APIs · Celery · Redis · GitHub Actions.
- **Good Hope Laboratory – Secure HealthTech Platform for Diagnostics:**  
Developed and deployed a secure digital diagnostics platform for Good Hope Laboratory, a fertility and semen analysis center. The solution enhanced appointment scheduling, test tracking, and automated report generation while maintaining compliance with healthcare data standards.
    - Developed and deployed a full-scale backend system for Good Hope Laboratory, a modern fertility diagnostics and semen analysis platform, enabling secure online patient interactions and automated lab operations.
    - Designed RESTful APIs using Django REST Framework to manage patients, test bookings, lab samples, and report generation with seamless integration between front-end and backend modules.
    - Implemented digital appointment scheduling and secure payment processing, allowing patients to book fertility tests, track progress, and receive reports directly via an authenticated dashboard.
    - Applied robust healthcare data-security measures including token-based authentication, role-based access control (RBAC), and data encryption to meet privacy and compliance standards (HIPAA-like).
    - Automated result workflows for test validation, report formatting, and delivery – reducing manual intervention and improving turnaround time for diagnostics.
    - Configured cloud infrastructure on AWS EC2 with Docker and CI/CD pipelines to ensure scalability, system reliability, and continuous monitoring.
    - Collaborated with lab and admin teams to create analytics dashboards for patient trends, lab efficiency, and daily reporting insights.
    - Tech Stack: Python · Django · Django REST Framework (DRF) · PostgreSQL · Redis · AWS EC2 · S3 · Docker · NGINX · GitHub Actions (CI/CD).

## Research Publications

- Improving Stroke Prediction Accuracy through Machine Learning and Synthetic Minority Over-sampling.
- Brain Tumor Segmentation and Classification Using ResNet50 and U-Net with TCGA-LGG and TCIA MRI Scans.
- Predictive Modeling of Cerebral Strokes: An ADASYN-RF Approach for Imbalanced Data.
- Enhanced Fake News Detection with Bi-LSTM Networks and TF-IDF.
- Brain MRI Classification and Segmentation on TCGA-LGG and TCIA Dataset.

## Certifications

- Machine Learning in the Enterprise – Coursera (Google Cloud)
- DeepLearning.AI TensorFlow Developer
- Machine Learning – Coursera (Stanford Online)

- Feature Engineering – Coursera (Google Cloud)
- The Modern Python 3 Bootcamp