

BUSHRA HUSAIN HABIB

Software Engineer | AWS Cloud Practitioner

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EDUCATION

B.Sc. Software Engineering | University of Bahrain

Sep 2022 – Jun 2026 | Bahrain

PROJECTS

UOB SmartLine — Smart Queue Management System | Senior Project | University of Bahrain *In Progress*

Progress

- ▶ Currently designing and developing a full-stack smart queue management system for the University of Bahrain registration office, targeting reduction of overcrowding and waiting times during peak periods.
- ▶ System features: remote ticket generation, real-time queue tracking, AI/ML-based waiting time estimation, location-aware push notifications (Firebase Cloud Messaging), self-service FAQ, and admin reporting dashboards.
- ▶ Conducted requirements elicitation via student surveys and staff interviews; produced DFDs (Level 0-2), functional/non-functional requirements, and user personas.
- ▶ Applied Incremental Software Process Model with structured risk management, schedule baselines, and milestone tracking.
- ▶ Tech Stack: Flutter (mobile), Java Spring Boot (backend), Spring Security, MySQL, Firebase Cloud Messaging, Python (ML waiting time prediction).

RoomMate — Open Source Hotel Reservation System | University of Bahrain

2026

- ▶ Led the open-source transformation of a Java hotel reservation system originally developed in a prior course; coordinated a team of four on task distribution, deadlines, and deliverable quality.
- ▶ Designed and developed the project website (HTML/CSS) including main page, navigation, features grid, announcements, and demo section; hosted on GitHub Pages.
- ▶ Authored the README, MIT LICENSE, and full project documentation following open-source best practices; managed repository hygiene including license corrections and broken link fixes.
- ▶ Configured and maintained CI/CD pipeline via GitHub Actions for automated build and testing.
- ▶ Tech Stack: Java 17, JUnit 5, GitHub Actions, HTML, CSS, GitHub Pages | Repo: github.com/FatimaxYusuf/RoomMate

Predictive Modelling for Customer Churn | University of Bahrain

2025

- ▶ Built classification pipeline in Python using Logistic Regression, Decision Tree, and Random Forest on the Telco Customer Churn dataset (~7,000 records).
- ▶ Achieved 80.8% accuracy and 0.845 ROC-AUC with Logistic Regression; performed EDA, feature encoding, StandardScaler normalization, and 70/30 train-test split.
- ▶ Identified contract type and fiber optic usage as top churn drivers and delivered actionable business retention recommendations.
- ▶ Tools/Libraries: Python, pandas, scikit-learn, matplotlib, seaborn, GridSearchCV.

Student Performance Prediction | University of Bahrain

2025

- ▶ Predicted student pass/fail outcomes from a 395-record academic dataset using Logistic Regression, KNN, Decision Tree, and Random Forest.
- ▶ Random Forest achieved best performance: 87.3% accuracy, 0.951 ROC-AUC; identified G1/G2 grades, study time, absences, and failures as key predictors.
- ▶ Tools/Libraries: Python, scikit-learn, pandas, Kaggle dataset.

Cloud Infrastructure — Student Attendance & Course Management System | University of Bahrain |

Group Leader

Dec 2025

- ▶ Led a 3-member team to design and deploy a multi-tier AWS cloud architecture for an academic attendance management system.
- ▶ Implemented VPC with public/private subnets across 2 Availability Zones, EC2 frontend/backend layers, Amazon RDS (MySQL), Amazon S3, NAT Gateway, and Internet Gateway.

- Configured Security Groups, Network ACLs, route tables, and an AWS Load Balancer with CloudWatch monitoring and Route 53 DNS for high availability and fault tolerance.
- Services Used: AWS EC2, RDS, S3, VPC, CloudWatch, Route 53, NAT Gateway, Application Load Balancer.

Hotel Reservation System | University of Bahrain

2025

- Designed a full-stack Hotel Management System architecture using the ADD (Attribute-Driven Design) methodology across 3 design iterations.
- Produced use case models, domain models, sequence diagrams, and module decomposition for core flows: room search, reservation, and payment processing.
- Selected Spring Boot + Spring MVC + JDBC architecture; addressed quality attributes including security, performance, reliability, scalability, and availability.

TECHNICAL SKILLS

Languages	Python, Java, JavaScript, Dart (Flutter)
Web	HTML, CSS, PHP, GitHub Pages, GitHub Actions
ML / Data	scikit-learn, pandas, NumPy, Logistic Regression, Random Forest, KNN, Decision Tree, GridSearchCV
Cloud & DevOps	AWS (EC2, RDS, S3, VPC, CloudWatch, Route 53, Load Balancer) — AWS Certified Cloud Practitioner
Mobile Dev	Flutter, Dart — UI design & state management
Architecture	Software Design Patterns, ADD methodology, UML (Use Case, Sequence, Domain Model)
UX / Design	UX Design Process, Wireframing & Low-Fidelity Prototyping, User Interface Prototyping
Other	Machine Learning, Risk Management, Time Management, Problem Solving, Teamwork

CERTIFICATIONS

- AWS Cloud Practitioner — Amazon Web Services (AWS)
- Fundamentals of Deep Learning — NVIDIA
- Fundamentals of Accelerated Computing with CUDA C/C++ — NVIDIA
- Advanced Flutter UI and State Management — Packt
- Getting Started with Flutter & Dart — Packt
- Foundations of UX Design — Google
- Build Wireframes and Low-Fidelity Prototypes — Google
- Start the UX Design Process: Empathize, Define, and Ideate — Google
- Python: Logistic Regression & Supervised ML — EDUCBA
- Ethics of Artificial Intelligence — Politecnico di Milano
- Intro to AI Ethics — Kaggle
- INJAZ Data Science Program — INJAZ AI-Arab / JA MENA
- INJAZ Project Management Program — INJAZ AI-Arab / JA MENA
- Head Start Program — INJAZ AI-Arab / JA MENA
- Essentials of Career Development — ThinkSmart Gulf

LANGUAGES

Arabic (Native) **English** (Full Professional) **Chinese** (Elementary)