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PROFESSIONAL WORK EXPERIENCE

Senior Software Engineer

PwC Middle East - ETIC

May 2024 – Present

Working as part of the Digital Product Solutions (DPS) team in the UK, focused on designing and building SaaS and custom enterprise systems for global enterprises. Below are highlights of the projects I've contributed to and my key responsibilities:

- [Assessment Hub](#) (Multi-Tenant SaaS)

- Enhanced performance by optimizing APIs Logic, caching and DB queries, reducing latency by 75% under high workloads.
- Developed Assessment Intelligence (AI Assistant) using RAG to automate technical assessments by leveraging Azure Services.
- Built Integration layer for inbound and outbound events to integrate with external third parties including data protection.
- Addressed complex memory leaks and migrated a legacy Vuejs app to the latest ecosystem like Vue 3, Vite, and Pinia.
- Implemented multi-tenant features across distributed and complex Azure cloud-native solutions to meet business needs.
- Conducted regular code reviews, feature and system design on large scale traffic, code refactoring, and unit/integration tests.

- Global/UK Client-based Projects

- Implemented dynamic features such as workflows, AI copilot, and integrations with external services based on business needs.
- Architected system components using Aspire, BFF, and Blazor, including caching, message queuing, and NoSQL/SQL databases.
- Engaged in building CI/CD pipelines using Azure DevOps for fast deployment, building artifacts, end-to-end and unit testing.

Tech Stack: .NET Core 10, Aspire, Blazor, SignalR, Microservices, IdP duende IdentityServer, VueJs, CQRS, BFF, SQL Server, YARP, Clean/Modular Architecture, Semantic Kernel, Semantic Memory, Azure Functions, Logic Apps, Service Bus, Data Lake, AI services.

Software Engineer

SilverKey Technologies

July 2021 – Apr 2024

- Taly BNPL (Buy Now Pay Later)

- Initiated the project architecture by applying the best practices in .NET Core with backend for frontend (BFF) pattern.
- Developed web portal features include plan management, onboarding workflow, maker/checker review, action logs, custom rule engine, in-system notifications, background services, and others.
- Implemented secure APIs (Internal & Integration) for onboarding/offboarding and repayment of external merchants.
- Design the system to be multi-tenant enabling banks to manage their segments using Role-Based Access Control (RBAC).
- Documented the database design, integration API Guide and other relevant technical documents.

- Taly Meeza Wallet

- Developed REST APIs based on service-oriented architecture (SOA) for the wallet mobile app and integration services.
- Implemented the integration layers (inbound and outbound) of **Meeza** digital network to handle wallet processing in Egypt, achieving both issuer and acquirer certifications from Egyptian Bank Company (EBC).
- Engaged with security team to remediate their findings ensuring PCI DSS compliance and standards for PII storage.
- Reduced database workload by implementing distributed caching layer, leading to improved overall performance.
- Write unit/integration tests using xUnit to ensure code maintainability that meets the business/integrations functionality.

- Taly Installment

- Developed file mapping and processing functionality to synchronize Bank installment plans and POS transactions.
- Implemented SFTP/FTPS connections for exporting and importing files to/from third parties.
- Created a file tracking feature with auditing capabilities to log all events associated with generated files.

- Education Quality Monitoring System (QMS)

- Delivered the [next phase](#) to the Ministry of Education and Technical Education (**MoETE**) in partnership with [GIZ](#).
- Developed many features in the web portal including school forums, self-assessments, statistics reports, and surveys.
- Implemented the backend REST APIs for school and administration tablets.

- [Labour Market Access Project](#)

- Created reporting dashboard for [LMAP Admin](#) portal to serve employment centers and job seekers in Egypt.
- Executed data migration of the database from the legacy software schema to fit the new software schema.

Tech Stack: .NET Core 8, Distributed Systems, IdP using Keycloak, VueJs, Blazor WASM & Server Side, LLBLGen ORM, CQRS, xUnit, SOAP gRPC, SQL Server, PostgreSQL, Docker, Temporal io, Microsoft Orleans, Open Telemetry, and Elastic Stack (ELK).

OPEN SOURCE CONTRIBUTIONS

EMVQR.NET

<https://github.com/mkassm/EMVQR.NET>

- Built and maintain a [Nuget Package](#) for generating and parsing QR Codes for digital payments in .NET, complaint with [EMV\(R\) QR Code Specification Standards](#).

SurveyJS

<https://github.com/surveyjs>

- Added Arabic Language Support on both libraries [survey-creator](#) and [survey-analytics](#).

EDUCATION

Beni Suef, Egypt

Beni Suef University

Sep 2018 – July 2022

- **Major:** B.Sc. in Computer Science, Faculty of Computers & Artificial Intelligence.
- **GPA:** 3.30.
- **Graduation Project:** [ASAR](#) (Arabic Manuscript Analysis and Recognition system). An intelligent system for digitizing and analyzing historical Arabic manuscripts.
 - Implemented word spotting and pattern recognition algorithms (PHOSC CNN model) to convert complex Arabic text images into digital text.
 - Created a [web application](#) using Flask to provide a user-friendly interface for accessing ASAR system.
 - Led the team in the research and development of ASAR system.

CERTIFICATIONS

- Microsoft Certified: Azure Developer Associate (AZ-204) | [Credentials](#) | Dec 2024 – Dec 2025
- Software Design and Architecture Coursera Specialization | [Credentials](#) | Mar 2021

PERSONAL PROJECTS

Listify

<https://github.com/mkassm/Listify>

Aug 2020 – Oct 2020

- Built a real-time web application enabling users to share their preferred music/videos with an online community.
- Developed streaming features and a currency system for an interactive platform experience.
- Integrated YouTube API and Spotify API to facilitate the request and playback songs and playlists within user rooms.
- Added payment integration with PayPal gateway for financial transactions and profanity filter with PurgoMalum API.
- Utilized the IdentityServer4 framework to enable single sign-on (SSO) and diverse user authentication methods.
- Tools used: ASP.NET Core 3.1, Angular 10, SignalR, EF Core, IdentityServer4, SQL Server, AutoMapper.

SKILLS

- **Programming Language** C#, Go Lang, TypeScript, JavaScript, Python, HTML, CSS
- **Back-End frameworks:** ASP.NET Core, SignalR.
- **Front-End frameworks:** Vue, Angular, Blazor Web Assembly and Server Side.
- **Databases:** Microsoft SQL Server, PosgreSQL, MySQL.
- **ORMs:** LLBLGen, Entity Framework Core.
- **Technologies:** Docker, Elastic Search (ELK), Open Telemetry with Jaeger, OAuth2 with Keycloak and Identity Server.
- **Distributed Apps Frameworks:** Aspire.
- **Asynchronous Messaging Systems:** Kafka, Azure Service Bus.
- **Testing:** xUnit, TDD, Integration Testing.
- **Core Knowledge:** Algorithms, Data Structure, Distributed Systems. Microservices, Service Oriented Architecture (SOA), DDD, Clean and Modular Architecture, Cloud Native, Serverless, SOLID Principles, Design Patterns and Principles, Database and System Design, Web Services, OWASP Web Security, Linux, Networking, and Agile Methodology.
- **Service Communication Protocols:** RESTful APIs gRPC, GraphQL and SOAP.
- **Cloud:** Azure Services like Azure Functions, Service Bus, Storage Account, App Insights, AI Services, and Logic Apps.
- **Other Skills:** Good technical writing and communication skills.

LANGUAGES

- Arabic (Native)
- English (Professional)