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Highly Experienced hands-on Head of Tech/CTO with strong background in both technology & business mainly Fintech/AI. Experienced in leading cross regional & Functional teams, driving innovation, aligning technology initiatives with business goals with specializing in leading development and scaling of decentralized microservice Architecture hands-on.

Achievements:

- Build 20+ microservice AI **Multi Agent Architecture** for Dubai leading AI Travel Startup powered by **G42** from scratch and scaled to full fledge project.
- Led a cross-functional team of **32 members** across Europe, MENA, and India to develop the **DIFC AllStars Digital Exchange** from the ground up. This pioneering exchange converted human performances into financial products, introducing a new class of derivative assets to the financial market for the first time in a decade.
- Award-winning team member for the leading branchless banking project "**Mashreq Neo**" and **Chat Banking** at Mashreq Bank. Played a key role in designing and implementing innovative digital banking solutions that enhanced customer experience and accessibility across the MENA region.
- Mentored over **50 early-stage startup** founders at **MISK Foundation**, helping them develop MVPs, establish tech team processes, scale Infrastructure & strategy alignment to achieve their innovation goals.

Engineered a cross-signaling server for WebRTC utilizing Janus and Kurento, significantly enhancing the performance of **Searchie AI's** interview solution. This groundbreaking development penetrated the Saudi market, adhering to MENA data and privacy regulations, and securing high-profile clients such as **Saudi Aramco** and **Jumeirah Group**.

- Panelist and speaker at the [United Nations Future Leader Alliance Conference \(FLA\) 2024](#) in Egypt, recognized for expertise in **making pivotal technical decisions** to achieve strategic goals aligned with SDG

Technology Stack:

- **Frontend Development:** Next.js 13+, Tailwind, React.js, HTML, CSS, JavaScript
- **Backend Development:** Node.js, Nest.js, Express.js, RESTful APIs, GraphQL
- **AI:** LangChain, ChromaDB (apis: openAI, ibm watson, AWS AI, Elevenlabs)
- **Blockchain & Cryptocurrency:** Solidity, Hardhat, Rust, Golang, Smart Contracts, Web3.js
- **Cloud Infrastructure:** Kubernetes, Docker, Terraform, AWS/AKS/GCP
- **Microservices Architecture:** Design, Development, Deployment, Orchestration
- **Messaging Systems:** Apache Kafka, Redis, RabbitMQ
- **Database Management:** PostgreSQL, MySQL, MongoDB, Redis, ORM/ODM (Prisma)
- **API Integration & Documentation:** Postman, Swagger, OpenAPI Specification (OAS)
- **Version Control & Collaboration:** Git, GitHub, GitLab, Bitbucket
- **Agile Methodologies:** Scrum, Kanban, Sprint Planning, Agile Development Practices
- **DevOps & CI/CD:** Jenkins, GithubActions, GitLab CI/CD, CircleCI, Travis CI
- **Test-Driven Development (TDD) & Automated Testing:** Jest, Mocha, Chai, Selenium
- **Monitoring & Logging:** Prometheus, Grafana, ELK Stack (Elasticsearch, Logstash, Kibana)
- **Security & Compliance:** OWASP Top 10, GDPR, PCI DSS, KYC/AML, RBAC, 2FA, GDPR, NIST
- **Technical Leadership & Team Collaboration:** Mentoring, Code Reviews, Team Building, Cross-functional & Cross-regional Collaboration.

- Professional Experience:



Head of Engineering (AI), Etera AI

Dubai, UAE | Aug 2024 – Present | onsite | AI

Skills: | Typescript | Python | Golang | Node.js | Kafka | K8s | LangChain | LangGraph | LLMs | CI/CD | Terraform | Microservices | blocks | Golang

- Architected and shipped a distributed backend ecosystem of **21+ microservices** built from scratch using Bun and ElysiaJS, designed around a **Kafka MSK** event-driven topology with fully decoupled domain verticals for Restaurants, Experiences, Hotels, and Flights orchestrated via Kubernetes (EKS) with Grafana/Loki for observability. Implemented structured event schemas, consumer groups, idempotent processors, and a unified contract layer to guarantee consistency across all AI-driven travel workflows with Federated MCP server architecture.
- Delivered deep third-party integrations including **Headout** (Experiences), **Emergent Travel Group / RateHawk** (Hotels and inventory), and **PKFare** (Flights meta-search and pricing). Implemented multi-stage ingestion pipelines with retry semantics, rate-limit governance, canonical data normalization, and failover strategies to stabilize upstream API volatility and ensure real-time availability of inventory data across the platform.
- Engineered a high-performance embedding service leveraging **BAAI bge-series** models for semantic representation. Implemented dual-store vector persistence using **pgVector** for structured relational queries and Redis for low-latency approximate nearest-neighbor **KNN** retrieval. Built a unified retrieval pipeline supporting hybrid similarity search, metadata filtering, and in-service vector transformations to power contextual AI recommendations across all verticals.
- Engineered a **multi-agent LLM** orchestration layer integrating **LangChain**, **LangGraph**, and **MCP** to enable tool-aware, cross-vertical reasoning. Designed hierarchical agent graphs with scoped memory, dynamic tool-binding, and structured registries for each vertical (Restaurant, Experience, Hotel, Flights). Implemented vector-augmented retrieval, stateful tool execution, and multi-step planning flows, allowing agents to coordinate in real time with high-throughput, fault-tolerant execution and precise tool-grounded decision making across the entire AI travel platform.



VP – Head of Engineering, Confidential

Dubai, UAE | March 2023 – August 2024 | Hybrid | Fintech | AI | Blockchain | Next.js | TypeScript | Node.js

- Developed and launched the **Meme Coin Creator** (<https://memecoincreator.com>), a leading tool for launching crypto tokens & NFTs on Solana, Base & Blast alongside DEX hence increasing the adoption within the cryptocurrency community & recognized project mainly in Solana community.
- Hoppers Network is an ecosystem & collection of Dapps. Worked on the Hopper PRO – Auto Trading AI platform for major CEX & copy trading as a Head of Engineering (<https://hopperpro.com>) & formed the **Hoppers Network** (<https://hoppersnetwork.com>) with HopperPeer for p2p payments.
- Played a pivotal role as a freelance consultant at **Kix Digital Exchange**, orchestrating the development architecture and streamlining processes for their **on-chain sports fantasy Exchange**. Leveraged extensive industry expertise from Allstars to inform decision-making. Authored smart contracts using the Solidity framework, employing ERC1155 standards to establish the **\$KIX token**. (<https://kix.digital>)
- **Led Shopify API** integration efforts, fostering crucial tech partnerships and spearheading the formulation of a robust tech strategy. Instrumental in optimizing platform performance and enhancing API documentation, integrating tools like Postman and Gitbooks to create developer-friendly resources for **Green Future Project** (<https://greenfutureproject.com>).
- Resolved significant latency issues plaguing **Pallet Exchange**, a leading NFT Exchange on the SEI Crypto network, by revamping their cloud infrastructure setup. Implemented Kubernetes (K8s) to efficiently manage resources, resulting in substantial reductions in latency and wait times, thereby enhancing user experience and platform reliability. (<https://pallet.exchange>)



Head of Engineering(IT), ALLSTARS DIGITAL (DIFC)

Dubai International Finance Center (DIFC), Dubai, UAE | Aug 2021 – Jan 2023 | Hybrid | Fintech

Skills: | Next.js | React.js | Node.js | Agile Project Management | Product Delivery | CI/CD | Blockchain | Analytics | Kubernetes | Terraform | Microservice | Kafka | Crypto Tokenomics | Solidity | fire blocks | Golang | Rust

- Worked as Senior IT Consultant later as Head of Tech for AllStars Digital Exchange, NFTs, ETFs & \$ASX Coin, a leading human indexing company that converts sports players performance into financial products, led the core development of the exchange – AllStars Digital Exchange.

- Established and led a **multidisciplinary team** of Frontend Engineers, Backend Developers, Designers, DevOps Experts, and Support staff at Dubai DIFC & remote. Fostered a collaborative and high-performing environment by implementing SOP best practices, leveraging team strengths, and providing regular feedback and mentorship. Successfully managed a cross-regional team of **32 members** across Europe, MENA, and India, optimizing productivity and driving continuous growth.
- Implemented **Fireblocks** for multi-custodial wallet solutions, enhancing security and efficiency in asset management with advanced controls and streamlined transaction processes.
- Successfully implemented (hands-on) a robust microservice architecture using **Apache Kafka** as a message broker, laying the groundwork for the seamless transition of the project into a microservices-based system.
- Redesigned the **DevOps/Cloud** Infrastructure team structure to shift from Windows VM's to Kubernetes infrastructure on **Azure Kubernetes Services (AKS)**, Terraform for IAC, Azure DevOps for CI/CD, and Docker based release hence streamlining the whole delivery process that can scale with environment segregation Development, Staging & Production.
- Acted as a liaison between non-technical stakeholders Managing vital business partnerships, including key stakeholders from **Multibank Group for MEX**, while collaborating with the CIO to introduce cutting-edge tools and frameworks that boost productivity within our technology stack.



Chief Technology Officer (CTO), Searchie AI

JLT, Dubai, UAE | Sep 2020 – May 2021 | Remote | AI | WebRTC | HRTech

Stack: Node.js | Python | MongoDB | PostgreSQL | React | Redux | Redis Enterprise | Microservice Architecture | K8s | Cloudflare Proxy | Docker | Agile | DPIA / ISO Standard Compliance Management | Kafka

- Led technical strategy for **AI video recruitment** platform, driving global expansion and revolutionizing the industry with ML and cognitive technology. Contributed to Searchie's acquisition by <https://ocean.ai> post-COVID-19.
- Led the implementation of a robust infrastructure built on Kubernetes(AKS) and a backend using Node.js, Redis and Python, and played a key role in the development of the frontend using React. Moved the message broker to Apache Kafka from Redis.
- Developed a **Cross Signaling Media server** utilizing Janus & Kurento media servers hence improving the quality of the quality & utilizing Amazon Rekognition for emotional analysis.
- Demonstrated strong skills in roadmap development and team management, including the use of **agile** methodologies to lead and manage a flexible and iterative development process.
- Implemented and maintained compliance with data protection policies, including the conducting of regular DPIA assessments as required by partners – most prominent were **Saudi Aramco, Jumeirah Group**.
- Worked closely with the development team to refactor code, eliminate technical debt, and improve the overall **performance** and **reliability** of the platform.
- Established a Support Team to enhance the customer experience, utilizing the **Freshdesk** platform for efficient and effective service delivery.



CLOUD INFRASTRUCTURE SPECIALIST, DUBAI MUNICIPALITY

Karama, Dubai, UAE | Jan 2020 – Aug 2020 | Dubai Gov | Contract

Stack: Kubernetes – on-prem | PKS | Ansible | Docker | Gitlab CI/CD | Jenkins | SVN | MongoDB | MySQL Server | Grafana | Prometheus | Terraform | F5 Proxy | Bash Scripting | Mendex | Kafka

I worked as a Cloud Infrastructure Specialist for Dubai Municipality (<https://dm.gov.ae>), a leading government organization in digital innovation, on a contract to maintain and develop new infrastructure using Kubernetes, Docker, Mendex, and Gitlab. This provided opportunities to work in a highly critical environment and Dubai government set an example as a leader in digital governance worldwide. The role included scaling databases such as MongoDB clusters on Kubernetes and MySQL servers and played part during COVID 19 drive by ensuring the system remain intact.

- Orchestrated containerization efforts, transitioning from Kubernetes on-premise to **VMware PKS** (Pivotal Container Service), optimizing scalability and resource management.

- Conducted comprehensive team training sessions on microservices architecture coupled with Kubernetes and Continuous Integration/Continuous Deployment (CI/CD) practices, empowering team members with essential skills for modern software development.
- Implemented **Docker** Enterprise Edition (EE) to align with the containerization strategy, ensuring consistency and efficiency in application deployment processes.
- Streamlined version control workflows by integrating **SVN** (Subversion) to Git, enabling seamless collaboration and continuous integration through **GitLab** runners and **Jenkins** pipelines.
- Enhanced monitoring and observability capabilities by deploying Prometheus for logging and Grafana for visualization, enabling real-time insights into system performance and resource utilization.
- Successfully migrated infrastructure to VMware Cloud (PKS) from on-premises environments, leveraging **Terraform** for Infrastructure as Code (IaaS) to automate provisioning and configuration management tasks, ensuring consistency and reliability across environments.
- Spearheaded the implementation of **service mesh** architecture using **Istio** to enhance network security, observability, and traffic management within the Kubernetes cluster.
- Introduced **GitOps** practices utilizing Argo CD for automated deployment and management of Kubernetes manifests, promoting Git as the source of truth for infrastructure and application configuration.
- Collaborated with cross-functional teams to integrate security best practices into the CI/CD pipeline, implementing vulnerability scanning and static code analysis tools such as SonarQube to fortify application security posture and ensure compliance with industry standards.
- During the challenging times of the COVID-19 pandemic, orchestrated the resilience of the system architecture, ensuring uninterrupted service delivery by leveraging Kubernetes on-premises and seamlessly migrating to VMware PKS (Pivotal Container Service). This initiative bolstered the platform's stability and scalability, enabling continued support for critical business operations amidst unprecedented disruptions.



SENIOR SOFTWARE ENGINEER, MASHREQ BANK

Dubai, UAE | Nov 2018 – Dec 2019 | Onsite | Neo Banking

Stack: React | Ionic | NativeScript | Angular | MySQL Server | Node.js | TypeScript | Wimo | Jest | TDD | bitbucket |

Mashreq Bank (<https://mashreqbank.com>) is a leading bank in the UAE, focusing on digital banking technologies and cross-platform frameworks like NativeScript, Node.js, Angular and React. Below are the key projects I worked on:

- Contributed as a Full Stack Developer to Mashreq Neo, a leading digital branchless banking app supporting over 100,000 users and winning the most innovative digital banking app in the GCC.
- Developed a leading banking application for Sellers (Digital Onboarding - DOB) using Angular and NativeScript, integrated CRM, Mashreq Gold, Mashreq COB CASA/PL, and deployed on Microsoft AppCenter, supporting over 10,000 sellers.
- Promoted to work on Kubernetes by setting up Azure K8s Service, Azure Container Service for new builds, Mobile notification when pipeline is triggered and more SSO for internal project.
- Omni-channel chatbot integration using smooch API to deliver chat banking services on all major social platform.
- Worked with backend team to improve the Round robin strategy for handling requests and better polling.
- Portworx for ensuring persistent data for K8s cluster and working closely with management for setting up a Federation based Kubernetes cluster for high availability and auto scaling.
- Worked on Cross platform solution like NativeScript to deploy mobile application on the AppStore and also worked on the NTB Runner which played crucial role for Mashreq Neo growth for fetching leads by the runners.



TECH LEAD, ATRIX DIGITAL

Islamabad, PK | Jul 2015 – Jun 2018 | Onsite | Software Service Company

Stack: Node.js | MongoDB | PostgreSQL | SQL Servers | Firebase | Redis | Kafka | Python | React.js | App Engine | Cloud run | Cloud Functions | Dialogflow | T2S | Lambda | Amazon Rekognition | WebRTC | | Janus/ Kurento/RTC | Ionic | NativeScript | Jest | Karma | Mocha | Chai | GraphQL | SailJS | Loopback | Express | TensorFlow

- Led and managed a team of 15 software developers at Atrix Digital Solutions, a service company focused on cross-platform development and enterprise solutions
- Expertise in Google Cloud Platform services, including Firebase project management, App Engine, Cloud Run, Cloud Functions, VPC, Dialog Flow, Text-to-speech, CNL, GKE, and K-Native
- Experience with Amazon Web Services, including EC2, EB, Code Deploy Pipelines, Amazon Rekognition, AWS Lambda, ECS, Chef Management, and Cloud Watch
- Provided training to students, entrepreneurs, and IT professionals on enterprise web development, cloud infrastructure, and cross-platform development
- Introduced a new technique for software management to ensure adherence to a basic set of standards across all projects.
- Developed React reusable components, CSS design systems (Bootstrap, Ant, Clarity, Carbon), and libraries for the team to use across all projects
- Provided IT consultancy to more than three hundred client's worldwide regarding web application architecture, cutting edge creative solutions & chatbot.
- **TDD** approach & Scrum cycle to ensure on time delivery, continuous delivery.
- Worked on government level **security project** using **OpenCV** to detect terrorist before they come close to a checkpoint.
- Developed with **PTCL BMS** project for QR Code based Battery management system.
- Crypto Trading bot called the "**SecureCoin Bot**" for a leading company TEST International in Pakistan.
- DNS provider and reselling software for a Germany company.
- Taxideals.ch – a Leading carpooling application based on Ionic Framework for switzerland private taxi firms.
- A food delivery system application to get orders, track riders, admin and payment using 2co for an American client - Paisano Pizza.

SOFTWARE ENGINEER, MARGALLA GROUP

Rawalpindi, Pakistan | March 2013 – Jul 2015

Stack: Node.js | JavaScript | PHP | HTML | MySQL | GDS API – Sabre | Laravel | Ember.js | Backbone.js | Linux | Apache | AngularJS 1x

Initially joined as a Developer and subsequently advanced to the position of Tech Lead, where I spearheaded the development of a sophisticated travel booking software (UBS). This software aggregated real-time pricing from various online sources to construct comprehensive travel packages. It encompassed a mobile application designed to enhance the user experience, facilitating seamless processes from passport retrieval and visa processing to departure and return for Umrah.

BACHELOR'S IN SOFTWARE ENGINEERING (BSE), COMSATS UNIVERSITY

2014 Batch | APFLC Kuala Lumpur, Malaysia | UNEC Bangkok Thailand