

# Farrukh Mirza

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Stamp 4 – Full Work Permit (Ireland)

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<https://github.com/farrukhmpk>

## Objective

I thrive in fast paced environments in a leadership role. As a senior leader & strategist, I believe in innovation, automation, efficiency, success & delivery through smart work & empowering team to take responsibility. I am passionate about emerging technologies and helping engineers & architects excel. I love solving problems.

As Head of API Development, I am leading & coaching engineering managers, product owners & architects, while influencing key business decision makers & stake holders, & organizing the teams for efficiency. I have lead, managed and mentored software engineers & architects working in different capacities in co-located and geographically distributed teams within agile & devops teams. I have more than 7 years of experience of team leadership and management, project management, enterprise software architecture, and overall 15 years of experience of software design, development, integration and maintenance.

I have worked in banking, mobile virtual network operations, customer relationship, energy, financial transaction & payments (e-Banking, e-Commerce), software lifecycle management and research environments. I maintained excellent relationship with customers, exceeding their expectations & advising them on their software investments.

In addition to personnel & business crises management, I also have extensive experience in architecting, engineering, troubleshooting & diagnosis of large scale complex systems.

## Management Skills & Abilities

Team Leadership & Management of Project Managers, Business Analysts, Senior Software Engineers, Technical Architects, UI/UX Developers & Test Architects. Agile Project/Program Management using Scrum & Kanban. Scoping, Budgeting, Customer Relationship, Crises Management, Product Backlog Grooming, Team Mentorship, Organizational Setup, and Career Development.

## Technical Skills & Abilities

- **Architectures:** System & Solutions Architecture, Microservices, Enterprise Service Bus (ESB), Middleware, RESTful, SOA, Conventional MVC & Reactive Web Applications, Highly Scalable Distributed Systems.
- **Design Methodologies:** UML, ERD, ArchiMate, Enterprise Integration Patterns (EIP), GoF, OOP/OOAD, Strategy, Factory, Abstract Factory, Front Controller, Template Method, Observer, Singleton, Circuit Breaker, HATEOS, Saga, Event Sourcing, Service Façade, API Gateway, TDD, BDD.
- **Enterprise Integration:** SSO (CAS/Shibboleth), OAuth, OIDC, SAML2, SOAP, REST, APIs, JMS, Apache Camel, Apache ServiceMix, Apache CXF, hMailServer, Postfix, ejabberd, LDAP.
- **Programming Languages:** Java (J2EE), JSP, JSTL, HTML/DHTML, JavaScript, SQL/PLSQL/JPQL, Linux Shell Scripting, Windows PowerShell and Batch Scripting, Microsoft Visual C++, C++, nesC.
- **Frameworks:** JQuery, JQuery UI, Bootstrap, AJAX, Spring Core, Spring MVC, Spring Security, Spring Boot, Spring Data JPA, Spring LDAP, Spring AOP, Spring REST, Hibernate, Java Message Service (JMS), Java Persistence API (JPA), JNDI, Java Cryptographic Extensions (JCE), Apache POI, Jackrabbit, Junit, Zebra Crossing (Zxing), XPath, JAXB, ehcache, TinyOS, uDig (Eclipse Plugin Development), MSMQ, MFC, STL, ATL, Win32 API, WinCrypt, CryptoPP.
- **DevOps & Tooling:** Nexus, Jenkins, Bitbucket, PostgreSQL, MS SQL Server, Oracle, MySQL, Docker, Apache, Tomcat, WildFly, WebLogic, Azure, AWS, Vagrant, Maven, DokuWiki, .Net Core, Git, Mercurial, SVN, OpenSSL
- **Protocols & Standards:** HTTP/HTTPS, SSL/TLS & MA-TLS, OAuth/OIDC, SAML2, AMQP, SSH, RDP, RSA, AES, DES, SHA, IEEE-802.15.4 (Zigbee), TCP/IP, RS-232, ISO-8583
- **Corporate Tech & Tools:** MS Office (365), MS SharePoint, Dynamics 365, MS Teams, Jira, Confluence, Rally

**Education****University of Dublin, Trinity College – Dublin, Ireland – Doctor of Philosophy (PhD)**

2009 - 2014

Computer Science

Title: Exploiting Unstable Paths in Urban-Scale Wireless Sensor Networks

**University of Dublin, Trinity College – Dublin, Ireland – Postgraduate Diploma (PGD)**

2009 - 2010

Statistics

Graduated with Distinction

**IELTS Certification – Karachi, Pakistan – English Language**

April 2008

Achieved Band 7.0 overall

**Sir Syed University of Engineering & Technology – Karachi, Pakistan – Bachelors of Science (BS)**

2009 - 2010

Computer Engineering

Received Gold Medal for First Class First Position.

Received Gold Medal for securing highest score in Mathematics among all engineering disciplines

Received multiple merit scholarships from university and Government of Pakistan for academic excellence

**Experience****Bank of Ireland - <http://www.bankofireland.com/>****Head of API Development (API Factory Lead), May 2020 – Present**

- Directly managing 5 Delivery Leads/Engineering Managers, 4 Solution Architects, 3 Technical Designers and indirectly managing 5 onshore/offshore delivery squads (up to 9 members each) including scrum master, product owner & multi-functional dev/test engineers.
- Leading, coaching and mentoring delivery leads and architects to build efficient DevOps delivery models.
- Conducting value based Lean review to remove waste from artefact and role perspectives while optimizing value delivered through API Factory.
- Managing multi-million euro budget, optimizing estimating model and building billing models, e.g, Fixed price – T&M composite model.
- Reorganizing the team to increase direct value delivery, while reducing indirect value delivery by digital transformation & automation.
- Generating and managing bank's internal API demand.
- Reporting to Head of Application Development, Director of IT Engineering & CIO.

**Senior Solution Architect, March 2019 – May 2020**

- Leading, coaching and mentoring team of technical architects, technical leads and senior software engineers in terms of enterprise software design and architecture and helping them architect, design and implement efficient systems in line with enterprise architecture strategy & principles. Review architecture summary and high level design documents. I am involved in technology & vendor selection for the enterprise using criteria such as fit-for-purpose, cost, value proposition, vision completeness, execution ability and market comparison. I am occasionally also involved in code reviews.
- Leading, coaching and mentoring project managers and business analysts to identify work items, assign priorities and resources in order to manage user stories, tasks, backlog and analysis. I help & coordinate with Project & Program delivery lead in setting up the product delivery roadmap and in managing vendor partners. Part of my leadership role is to help & coach scrum masters improve the quality produced by the scrum team and refine definition of done.
- Responsibilities include extensive coordination with project managers, delivery managers, business analysts, security architects, and principal architects. I socialize solutions and influence multiple stake holders like Head of Application Development, Head of Cloud, Head of Infrastructure, and Head of Test & Environments by conducting extensive discussions in relation to architectural & operational choices.
- I am continually leading DevOps, Containerization, Automation & Microservices adaption strategy. Due to my vast experience and background, I am also involved in developer enablement, SDLC process improvement for on-shore and off-shore engineering resources, technical crises and risk management. I

coach the architects, senior engineers and product vendors in identifying the system performance bottlenecks and implement improvements to achieve non-functional requirements (NFRs).

- Architecture activities include the use & implementation of Microsoft Office, Microsoft Visio, Atlassian Suite (Jira & Confluence), Amazon AWS, Microsoft Azure, Java, Mulesoft, Spring Boot, Netscaler, Microservices, Asynchronous Messaging, OAuth/OIDC, PSD2, Strong Customer Authentication.

**Client Solutions Ltd** - <http://www.clientsolutions.ie/>

Formerly known as TechData Client Services and Avnet Client Solutions

**Solution Architect & Development Team Manager**, January 2016 - February 2019

- By consistently delivering profitable value, I was promoted to Solution Architect and Development Team Manager Role. I was given responsibility to manage customer expectations as well from ideation and early engagement all the way to delivery in addition to increasing people management responsibilities and leading architecture.
- I was responsible for managing multiple teams reporting to me in this role. I was managing 9 people concurrently in this role. I used people from existing team in multiple project/product development to keep the team financially viable. Apart from task prioritization, program/project/sprint/resource planning, I was also responsible for recruitment, mentoring, career development, performance management, annual performance reviews, and weekly 1:1 of my team. I recruited 2 additional senior engineer (1 Java engineer and 1 UI engineer focusing on NodeJS and React) and 2 junior engineers during this time. I enabled my team by empowering them to take decisions collaboratively and set the technological direction. I mentored 2 senior engineers to step into team leadership role and made them accountable for output of junior developers.
  - Tesco Mobile Team: 7/8 members, expanded from 5 members.
    - 2 testers in Serbia
    - 1 UX designer was engaged in Serbia
    - 3 developers in Dublin, 2 of them were promoted to senior engineers. 1 developer in Dublin also worked as DevOps Engineer.
    - 1 UX designer in Dublin after the resource in Serbia moved on
    - 1 Senior Engineer/Architect in London (Was full-time employee working from Dublin, later moved to London and worked for the team as a contractor). This resource also worked as DevOps Engineer.
  - RDMA Product Team: 4 members. Data Management product providing secure front end, able to connect to disparate & distributed databases.
    - 1 developer in Serbia
    - 1 developer in Dublin (Reused from the existing team)
    - 1 UX designer in Dublin (Reused from the existing team)
    - 1 tester in Serbia
  - DevOps Team: 2 member. Responsible for implementing ALM Tooling & CICD pipeline on multiple projects including Tesco Mobile Ireland, Irish Water, The AA Ireland.
    - 1 developer in Dublin (Reused from the existing team)
    - 1 Senior Engineer/Architect in London (Was full-time employee working from Dublin, later moved to London and worked for the team as a contractor).
  - Naturgy (Vayu) Team: 2 members. Team was delivering data migration & support services. Worked in Project Manager capacity.
    - 1 Technical Architect (.Net)
    - 1 Senior Database Engineer (Oracle, SQL Server)
  - Advanced Analytics Team: 2 members. Initiated Advanced Analytics Team in Poland through a vendor partner (small outfit).
    - 2 Data Engineers working on R, PowerBI, Microstrategy, SQL Server Enterprise Datawarehouse.
  - Independent Team delivering bespoke projects in Cork
    - 1 technical lead directly reported to me in Cork, 3 developers were working for him. The team in Cork focused on bespoke projects, small in nature. The team worked independently to deliver projects in Cork.
- I focused on collective performance improvement of the team by encouraging them to contribute in

open source, read multiple articles/books per week in emerging technology domains, scheduling by-weekly technology presentations between Cork and Dublin teams to share knowledge and upskill collectively as a team.

- During this time, my team won the multi-stage contract from Tesco Mobile Ireland to re-platform their back office Campaign Manager and Customer Retention system with a number of added modules including debt collection, sim and number swap, customer single view, product management, content management, front desk news and information, payment processing using Mastercard Datacash and complaint management modules, resulting in a very modular CRM system. This was a 2 years project with an approximate budget of €500K. This project resulted in re-architecture of the platform using microservices architecture resulting in 10 micro front-ends integrated through single sign-on, 28 back end microservices and 10 asynchronous micro data processors. Some of the technologies used were Java, Spring Boot, RESTful services, Apache Camel, Apache CXF to build SOAP clients, Spring Data JPA, JQuery, WildFly, Apache HTTP with mod\_cluster, Shibboleth, CAS etc.
- I was also given responsibility to re-platform a reference data management product (RDMA) based on the success of the Tesco Mobile program of work. The product development lasted for 1 year with circa €100K in budget. The product was capable of connect to a wide range of RDBMS and perform distributed joins across disparate RDBMS.
- I worked as project manager for a 6 month data migration & support services project for Naturgy (Vayu).
- My team was allocated 6 month platform migration project for The AA Ireland, where I provided the DevOps engineer from my team.
- I was given responsibility to initiate Advanced Analytics R&D Team through an existing vendor partner in Poland to increase company's offerings and portfolio beyond data warehousing.
- I empowered my team to modernize software development life cycle and introduced modern tooling like Rally (later on Jira), Bitbucket, Jenkins and Nexus to build CI/CD pipelines across Azure IAAS environments.

#### **Technical Architect & Team Lead, April 2014 – December 2015**

- After submitting my PhD thesis, I joined Avnet Client Solutions on full time basis, and was promoted to Technical Architect & Team Lead.
- The team already had 2 near-shore resources (1 tester, 1 UX designer) working from Serbia, 1 developer in Cork and 1 architect working in Dublin. I recruited 1 Java developer and later a UX designer in Dublin within the team to improve team efficiency, increasing the team size to 5 members reporting to me. This team became multi-functional team responsible for end-to-end delivery and post go live support & maintenance.
- My responsibilities included providing day-to-day leadership to the engineering team, prioritizing and assigning user stories and tasks to the team, carry out daily stand-up, sprint planning, defect fix planning, technology selection and design decisions weighing alternatives.
- During this time, the work from Tesco Mobile Ireland increased based on my team's performance and we were contracted to build <https://my.tescomobile.ie/> publicly available self-service portal in addition to feature development work in existing Campaign Manager and Customer Retention systems. The development work on the self-service portal lasted for 1 year (accessed by 500,000 customers) including infrastructure provisioning, testing, bug fixes and go live, with continuous post go live feature requests carried out till present. The self-service portal was based on Java, Spring Framework 4, RESTful architecture, Spring-Data JPA, Spring Security, Apache CXF, and PostgreSQL. Apache ServiceMix was also introduced as an enterprise service bus technology by the team.
- My team implemented a web based commercial archive system for Irish Water using Java, Spring MVC, JPA, RESTful services, Oracle WebLogic Application Server, Oracle 11 Database. This project lasted for 3 months, where the team was only responsible for development and test activities.
- My team did a short 1 month integration project for Naturgy (Vayu), to integrate with external energy provider systems using Spring Boot and Apache CXF to integrate with SOAP webservice. The team delivered a separate 1 month integration project using Linux Shell scripting and VSFTP server, to aggregate energy provider production data with advanced analytics system.

#### **Software Development Consultant, February 2013 – March 2014 (Part-Time)**

- I joined Avnet Client Solutions on a part time basis while completing PhD as a software development consultant. I worked as developer on Campaign Manager and Customer Retention systems, built for Tesco Mobile Ireland. Campaign Manager system were used by Tesco Mobile Ireland's backoffice to send communication to the customer base of approximately 300,000 customers at the time. The customer retention system was used by Tesco Mobile Ireland to perform plan switches and upgrades.
- Technologies used comprised of HTML, Javascript, JQuery, Java, Apache Wicket, Apache Camel, Apache CXF, Apache HTTP, Apache Tomcat, ActiveMQ JMS, PostgreSQL and Enterprise Integration Patterns.

**Distributed Systems Group, University of Dublin - Trinity College - [www.dsg.cs.tcd.ie](http://www.dsg.cs.tcd.ie)**

**PhD Researcher, July 2009 – April 2014**

- Invented routing protocol for wireless sensor network, capable of intelligently providing fault tolerance, energy conservation, congestion and latency reduction depending on the network conditions, as part of PhD thesis.
- Developed Peer-to-Peer communication framework over TCP/IP, temporal & spatial aggregation techniques & embedded distributed middleware, as part of EMMON project from 2009 to 2012 using Java, Swing, JNDI, nesC.
- Technical Leadership & Task assignment of 1 researcher in Dublin and 1 researcher in Portugal.
- Responsibilities included coordinating with near shore teams spread across EU (Portugal, Italy, UK & Ireland)
- Research funded by Lero and European Union FP7

**Research Assistant, July 2008 – July 2009**

- Designed & developed thick client domain modelling & simulation software for geographic visual modelling using Java, uDig SDK, Hibernate, PostGIS & PostgreSQL.
- Designed & developed SOAP webservices using Java to enable AI components to fetch simulated sensor readings from the simulator.
- Research funded by Enterprise Ireland

**Hindsa Technologies Limited - [www.hindsa.com](http://www.hindsa.com)**

**Software Development Engineer, November 2006 – June 2008**

- Contributed in design, development, testing, quality assurance and customer support of **eXtreme Manager** product, that focused on providing a web based experience for managing software lifecycle using Java, Spring MVC Framework, Hibernate, JSP, JSTL, MySQL, SQL Server and Oracle.
- Trained in Agile software lifecycle management

**Avanza Solutions (Pvt) Limited - [www.avanzasolutions.com](http://www.avanzasolutions.com)**

**Team Lead, March 2006 – October 2006**

- Lead a small onsite team of 3 members to implement e-Banking suite of products for Bank Muscat International, Kingdom on Bahrain. The product suite consisted of ATM Controller, Financial Middleware, ATM Card printing software, Channels Manager & Operational Data Store, primarily written in Microsoft Visual Basic and Visual C++ using MSMQ and TCP/IP based communication and SQL Server and Oracle as database technology.
- Customer communication and reporting to Bank Muscat International's Head of IT.
- Customer Training Management
- Reported directly to the CEO and CTO of Avanza Solutions due to the strategic nature of the project.
- Task Management (estimation, tracking and assignment)
- Collaboration with onsite & offsite development teams.
- Integration with Vendor Partners
- Hands-on development & customization of the products.
- Detailed data analysis & trouble shooting.

**Software Engineer, February 2005 – March 2006**

- Designed & Developed prototype ATM surveillance software in Microsoft Visual C++ 6.0, MFC, ATL.
- Designed & Developed prototype Bio-metric finger print scan/matching software for additional ATM authentication using Microsoft Visual Basic 6.0, ATL, COM+.

	<ul style="list-style-type: none"> <li>Received training on ATM Controller and Financial Middleware products.</li> </ul>
<b>Publications</b>	<ul style="list-style-type: none"> <li>Mirza, F., Bouroche, M., Cahill, V.: Unstable path routing in urban-scale wsn. <i>ACM SIGBED Review</i> 9(3) (2012) 24–28</li> <li>Tennina, S.; Bouroche, M.; Braga, P.; Gomes, R.; Alves, M.; Mirza, F.; Ciriello, V.; Carrozza, G.; Oliveira, P. &amp; Cahill, V. “EMMON: A WSN System Architecture for Large Scale and Dense Real-Time Embedded Monitoring,” In <i>Proceedings of IFIP 9th International Conference on Embedded and Ubiquitous Computing (EUC)</i>, 2011, 150-157.</li> </ul>