

ABRAR SHARIF MUDHIR

LEAD ENGINEER

PROFILE

GITHUB: [abrarmudhir.github.io](https://github.com/abrarmudhir)

LAST UPDATED: 01-Aug-2024

As a versatile engineer with experience in financial services, I offer strong critical thinking skills, technical leadership, and adept project management capabilities. With a thorough understanding of algorithms, data wrangling, data engineering, data products, and analytics, I leverage my technical expertise in software engineering and data to craft innovative business solutions for corporate clients.

EDUCATION

[University College London](#), London, UK

SEP 2004 – JUN 2008

*Masters of Engineering - M.Eng. (Hons) in Computer Science (2:1)*

- Emphasis on practical experience. Strong in software engineering, system design, and computational complexity.
- **Project:** *Investigation of correlated movement of exchange rates using neural networks.*

CERTIFICATIONS

Microsoft

APR 2022 – PRESENT

[Azure Certifications](#)

- ASSOCIATE (4):**
- [Data Engineer Associate \(DP-203\)](#) • [Data Scientist Associate \(DP-100\)](#)
  - [Database Administrator Associate \(DP-300\)](#) • [AI Engineer Associate \(AI-102\)](#)
  - [Power Platform Developer Associate \(PL-400\)](#)

- FUNDAMENTALS (8):**
- [Azure Data Fundamentals \(DP-900\)](#) • [AI Fundamentals \(AI-900\)](#) • [Azure Fundamentals \(AZ-900\)](#)
  - [Microsoft 365 Fundamentals \(MS-900\)](#) • [Dynamics 365 Fundamentals \(CRM\) \(MB-910\)](#)
  - [Dynamics 365 Fundamentals \(ERP\) \(MB-920\)](#) • [Power Platform Fundamentals \(PL-900\)](#)
  - [Security, Compliance, and Identity Fundamentals \(SC-900\)](#)

EXPERIENCE

[illio Technology Ltd](#), London, UK

AUG 2023 – PRESENT

*Senior Data Engineer*

Led the architecture and implementation of AWS-based ETL pipelines and Analytics platform, designing and developing data integrations and products.

- ACHIEVEMENTS:**
- Technical Leadership & Team Development: Built the data function from the ground up, hiring and developing a team that included a mid-level data engineer and a data scientist. Provided technical leadership, coaching, and mentorship.
  - Project: Serverless Data Pipelines - Implementing cloud-native ETL pipelines and a Data Analytics and Insights platform by leveraging key AWS services and Apache Airflow for Orchestration.
  - Project: Data Integrations and APIs - Building data integrations with market data providers and brokers. Building data APIs using a microservices architecture, deploying Docker and Kubernetes for container orchestration. Leveraging Fast API and Functions as a Service on AWS Lambda with API Gateway for efficient and modular API development.
  - Project: Analytics and Insights – Building an analytics and insights framework to facilitate faster time-to-market of Pythonic functions. Implementing analytics for Equities, FX, and Fund/ETF asset classes, focusing on financial markets and client multi-asset portfolios, including Cryptocurrencies.

**SKILLS:** • Data Engineering on AWS (AWS Glue (ETL, Crawlers, Catalog, Workflow), Apache Airflow, Python, Pandas, SQL Alchemy, Fast API, Lambda, PostgreSQL, Data Lake - S3) • Full Stack (Python, React, Kotlin, Kubernetes) • DevOps (AWS CDK, GitLab) • Cloud (AWS (EC2, SNS, SQS, RDS, Redshift))

**BlackRock, London, UK**

**AUG 2021 – FEB 2023**

**Vice President - Regional Team Lead of SFI Alpha Generation**

Lead engineer for the investment model platform, focusing on team development and people management. Collaborated with the Fixed Income team to implement and back-test alpha models, and built front-office solutions for pre-trade, trade capture, and reporting.

**ACHIEVEMENTS:**

- Technical Leadership & Team Development - Mentored and developed a team of engineers, including 3 Senior Quant developers, fostering their career growth and technical skills.
- BAU: Model Implementation - Worked with Quant Analysts to implement and enhance various models on the Pythonic alpha platform, including alpha, transaction cost, risk models, and optimizers. Managed cross-team implementations for Equities, Macro, Credit (structured), and Innovation, ensuring successful deployment across different asset classes. Enhanced the alpha framework with robust back-testing capabilities. Integrated INTEX Wrapper APIs for analysis of mortgage-backed assets.
- Project: Aladdin Alpha Platform (Dynamic Flow) - Led the development of Aladdin Alpha Platform, emphasizing scalable design and reusability. Integrated with Snowflake for enhanced efficiency.
- Project: Defence in Depth - Executed a comprehensive security upgrade for six major investment applications, redesigning components for secure architectures. Implemented secure APIs across diverse languages, including .NET, MATLAB, Perl, Python, and Java.

**SKILLS:** • Leadership (Change Management, People Management, Project Management) • Practices (Agile, BDD, TDD) • Quant Stack (Python, Pandas, NumPy, Numba, Dask, Java, C#, MATLAB, SAS) • BI (Tableau, Microsoft Power BI) • Cloud (Microsoft Azure, Azure VM, Azure Functions) • Scheduling (Autosys)

**Atlantis Solutions BV for ESA - European Space Agency, Didcot, UK**

**JAN 2020 – JAN 2021**

**Full Stack Developer - LONG TERM CONTRACT (LTC 12 MONTHS)**

Worked on a twelve-month contract with the European Space Agency (ESA), contributing to the Advanced Research in Telecommunications Systems Management Information System (ARTES MIS) project.

**ACHIEVEMENTS:**

- Project: ARTES MIS - Developed a Java and Spring Boot backend REST API, along with a JSF and React front-end application, to manage 350+ research and development activities within the ARTES MIS project for the TIA Directorate.
- BAU: Best Practices Rollout - Created secure, clean code on ESA cloud infrastructure, providing user training, and resolving technical issues. Migrated applications to a common environment for tools harmonization across TIA, contributing to knowledge exchange with team members and IT professionals.

**SKILLS:** • Full Stack (Java, React, Spring Boot, Node.js, MariaDB) • Practices (Agile, BDD, TDD) • CMS (SharePoint) • BI (Microsoft Power BI) • Private Cloud (Private Network, Kubernetes, Docker, LDAP)

**Golden Source Limited, London, UK**

**MAR 2019 – SEP 2019**

**Senior Consultant, Professional Services - CONTRACT**

Worked as a Technical SME and Project Manager, handling budgeting, forecasting, stakeholder communication, and planning. Managed a team of five in migrating Golden Source to a cloud-hosted environment and led the upgrade of the legacy Security Master and Pricing product.

**ACHIEVEMENTS:**

- Project: M&G Prudential, Lite Security Master, and Pricing - Golden Source Upgrade - Delivered technical architecture advice and crafted functional and business requirements, technical solutions, and architecture documentation as a Technical SME and BA.
- BAU: Best Practices Rollout - Successfully advocated for and implemented DevOps practices and tools, enhancing Continuous Integration/Delivery (CI/CD), and streamlining delivery and regression testing.

**SKILLS:** • Leadership (Project Management, Microsoft Project) • Practices (Agile, JIRA) • GoldenSource EDM (Workflows, GSO/Mapping Designer, Connections) • Full Stack (Python, Java, Databases) • Integrations (Aladdin) • BI (Web Focus)

**BlackRock, London, UK**

**NOV 2017 – MAR 2019**

**Associate, Senior Data Engineer of Aladdin Core Data**

Worked as a Senior Data Engineer, served internal investment teams, and fulfilled data product needs.

**ACHIEVEMENTS:**

- Project: Large Datasets Pipelines - Increased data processing efficiency through the development of PySpark and Scala data pipelines, effectively managing large datasets on the Hadoop Distributed File System (HDFS).
- Project: Web Scrappers - Created a Java and Spring-based scraping framework, enabling rapid prototyping of new scrapers with reusable components. Enhanced data ingestion and crawling efficiency using Python and Java scrapers.
- Project: Decommissioning of Data Management Platform (DMP) - Re-architected J2EE monolithic data platform into Python microservices for enhanced scalability. Developed flexible data models and pipelines, creating an internal Data Lake for efficient storage and accessibility of datasets from multiple sources.
- Project: Decommissioning of MALT Refinery, Timeseries MIS - Revamped time-series data catalog management, replacing a C# desktop app with an advanced web application. Employed Angular for the front end and Java Spring Boot for the back end, achieving improved accessibility and usability.

**SKILLS:** • Data Engineering (Data Modelling, Data Lake, Hadoop, Apache Spark) • Full Stack (Python, Java, C#, Spring Boot) • Practices (Agile, BDD, TDD) • DevOps (GIT, Sonar) • Scheduling (Autosys)

**Golden Source Limited, London, UK**

**JUL 2016 – NOV 2017**

**Senior Technical Consultant, Professional Services**

Worked as a senior technical consultant and SME and led GoldenSource implementations for clients. Led a 4-person team to validate intraday pricing rates, curves, and surfaces in a Reference and Market Data Project. Led a 4-month Fundamental Review of the Trading Book (FRTB) Proof of Concept (POC).

**ACHIEVEMENTS:**

- Project: Siemens Financial Services, Market Data Solution Implementation - Built a reusable Murex connector and R analytics library with potential for sale to other clients. Utilized WebFOCUS (GS Insight) for BI reports, enhancing data accuracy and reporting efficiency.
- Project: ICBC Standard Bank, Fundamental Review of Trading PoC - Integrated C libraries for scenario generation, enabling stress testing and output storage in the Golden Source Risk Master Data Model. Supported FRTB, showcasing advanced risk management.

**SKILLS:** • Full Stack (Python, JEE, PSSQL (Oracle), R) • Golden Source EDM (Orchestrator, Workflows, Mapping Designer, Market Data Solution)

**Rapid Addition Limited, London, UK**

**OCT 2014 – JUL 2016**

**Senior Developer, Trading Technology**

Worked as a senior developer, implementing core functionalities for low-latency FIX engine libraries in both Java and C#. Contributed new full-stack ASIC reporting product, utilizing FIX protocol. Extended RA ShortCut – FIX for BizTalk, enhancing performance and resolving bugs.

**ACHIEVEMENTS:**

- Project: RA FIX Engine - Improved Java and C# FIX engine libraries with new API features, reduced error rates through code reviews, and increased test coverage. Developed trading solutions, FIX, and FAST engines, streamlining processes, and enhancing stakeholder satisfaction.
- Project: RA ASIC Short Reporting Tool - Implemented a Full-stack solution for submitting short-selling reports to ASIC, enhancing efficiency through optimized FIX protocol utilization. Utilized ASP.NET and C# for the front end and MSSQL for the back end, ensuring seamless deployment on Azure Cloud, and reducing deployment time.
- Project: RA ShortCut – FIX for BizTalk - Enhanced core functionality, achieving measurable improvements in system performance and successfully resolving reported bugs.

**SKILLS:** • Full Stack (Java, .NET (C#, ASP.NET) • FIX (Protocol/Engine, Certification)  
• Middleware (Microsoft BizTalk) • Cloud (Microsoft Azure)

**BlackRock, London, UK**

**AUG 2010 – JUL 2014**

**Associate, Senior Quant Developer of Model-Based Fixed Income**

Worked as a quant developer, implemented fixed-income investment models, optimizing efficiency, ensuring accurate data feeds, and managing the entire model lifecycle from development to production.

**ACHIEVEMENTS:**

- Project: Common Alpha-Gen (CAGE) Platform- Developed core features to enable quant function encapsulation in SAS, R, and MATLAB. Executed the integration of task graphs with investment systems.
- Project: Model Implementation - Collaborated on Model Implementation and Back-Testing with Quant analyst researchers. Implemented alpha, risk, and t-cost models in MATLAB, SAS, and R for a Fixed Income platform, improving model efficiency and accuracy.
- Project: Data Management Platform- Engineered Data Management tools for efficient slicing and dicing of input data, delivering Tableau reports for front-office portfolio managers to enhance monthly attribution and investment dataset views.

**SKILLS:** • Data Engineering (Informatica, J2SE/JEE, JavaScript) • Quant Stack (MATLAB, SAS, R, C#) • BI (PowerBI, Tableau, SAP Business Objects) • Scheduling (Autosys)

**Client Knowledge Limited (now ICAP), London, UK**

**MAY 2009 – AUG 2010**

**Quantitative Developer, Managed Models**

Worked as a quant developer and connectivity engineer, facilitating real-time market connectivity and high-frequency algorithmic trading.

**ACHIEVEMENTS:**

- Project: Market Connectors - Designed and developed a low-latency framework to capture, receive, and replay real-time high-frequency data, reducing reliance on third-party market data systems. Developed adapters for CEP Engines enabling direct access to streaming market data using FIX technologies. Connected to various forex market data feeds and the Market News Dow Jones feed.
- Project: Model Implementation - Collaborated with research analysts to implement quantitative models including Value at Risk (VaR) and FX trading models in CEP engines (Progres Apama and Coral8).

**SKILLS:** • Full Stack (Java, JavaScript, Progress Apama CEP) • FIX (QuickFix, Client Onboarding, Testing) • Data Engineering (Data Modelling, SQL) • BI (SAP Business Objects BI 4. X).

**Barclays Global Investors (now BlackRock), London, UK**

**JUN 2008 – SEP 2008**

**SOA Performance Analyst, Enterprise Architecture - INTERNSHIP**

**SKILLS:** • Full Stack (Java, Progress Sonic Workbench, JMS, Streaming, JBoss/Tomcat containers)

**British Telecom, Adastral Park Ipswich, UK**

**JUL 2007 – SEP 2007**

**Rich Client User Interface Designer, Innovation Lab - INTERNSHIP**

**SKILLS:** • Full Stack (Java EE, JSPs, SIP Servlets, XML, HTML, CSS, JavaScript, AJAX, Web 2.0)

**Sempra Energy, London, UK**

**AUG 2006 – OCT 2006**

**Financial Application Developer, Energy Trading - INTERNSHIP**

**SKILLS:** • Full Stack (Excel VBA, Java, XML processing, HTML, CSS, JavaScript)