Contact Information

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Location: London, UK

Nationality: British

Summary

Experienced hands-on Architect offering strategic solutions and capability development. With experience, expertise, and a deep understanding of the financial, government and startup sectors. My main objective has always been to deliver real solutions that achieve impactful results. Focused on Integrating GenAI applications, automations, alignment, and guardrails with current enterprise data & API's.

Skills

- **Architecture** Data, ML, AI, Cloud, IoT, Blockchain, Security & Solution, HLD & LLD
- **General** Strategy, Stakeholder Management, Agile Methodologies, Workshops & Mentoring
- **Patterns** EDA, Event sourcing, CQRS, REST/GraphQL API's, RAG
- **Cloud** AWS, GCP, Azure, Colab, Hugging Face, RunPod, Railway & Render
- **DevSecFinOps** IaC, PaaS, CI/CD, Monitoring (Observability & Control) Automation.
- **Containerization** Docker & AKS (Azure Kubernetes Service)
- **Application** SDLC, Migration, Integration
- **Data Migration** ELT, MLFlow, Pipelines, DWH, Datalake, Curation, Governance & Quality
- **Databases** SQL, NOSQL, Graph & Vector DBs
- **IAM** (Identity and Access Management), RBAC & ABAC
- **Security** Zero Trust, Encryption (In Motion, At Rest)
- **Programming** Python, JavaScript, Java, Terraform, CLI
- **AI Assistants** Azure Promptflow, Duet, Co-Pilot, Databricks Assistant, OpenAI Assistant API
- **GenAI** Agents, Frameworks, Alignment, Guardrails, Prompt Engineering & Fine-tuning LLMs
- **Models** GPT-3.5-Turbo, GPT-4-Turbo, GPT-4-Vision, Text-Davinci-003, TTS, Wisper, DALL.E 3, Palm 2, Claude 2, Llama 2, Mistral, Zephyr

Professional Experience

Sabbatical for advanced AI and GenAI development (09/2023 – 11/2023)

- Dedicated three months to an intensive, self-directed sabbatical with a deep focus on advanced Artificial Intelligence (AI) and Generative AI (GenAI) technologies.
  Concentrated on hands-on development of cutting-edge applications, enhancing skills in

prompt engineering, model behaviour fine-tuning, and leveraging bespoke data retrieval augmentation generation (RAG).

- Engaged in the development and experimentation with long-term memory capabilities of AI models, enabling them to interact with external functions such as APIs, real-world sensors, and actuators, pushing the boundaries of AI's practical applications.
- Mastered multi-modal interactions including speech-to-text (STT), text-to-speech (TTS), computer vision (CV), as well as image and video generation, ensuring a comprehensive understanding of the latest advancements in AI interaction techniques.
- Focused on AI alignment and implementing guardrails to prevent harmful AI behaviours, ensuring ethical and safe deployment of AI technologies.
- Explored and devised strategies for integrating these advanced AI capabilities into existing IT systems, drawing on extensive experience in the field, with the aim to democratize AI use and make it more accessible and impactful in various real-world scenarios.

Lead Cloud Solution Architect - Howden Group (08/2020 – 08/2023)

- **Hands-On Cloud Migration and Containerisation**: Led and executed the migration of the group's applications from AWS (S3, ECS, SNS, SQS) to Azure. Personally, managed the containerisation and deployment of these applications to AKS, EventGrid, EventHub etc. ensuring a seamless transition and maximising performance within the Azure environment.
- **Advanced Security Implementation**: Elevated application security by integrating OAuth, capitalising on Azure AD, B2C, B2B, IAM, and RBAC, thereby laying the foundation for a secure and contemporary authentication and access management system.
- **Operational Automation and Oversight**: Adopted a fully automated infrastructure management strategy, incorporating Infrastructure as Code (IaC) and CI/CD methodologies. Augmented system observability and security by integrating state-of-the-art tools such as SEIM and SOC.
- **Data Management and Collaboration Transformation**: Reimagined the insurance broker marketplace platform, transitioning from traditional data warehousing to a cutting-edge Lakehouse model, harnessing ELT processes, Azure Synapse, Databricks, Live Tables, and Unity Catalog. This evolution facilitated an integrated workspace for data engineers, scientists, and analysts.
- **CRM Integration for Business Efficiency**: Seamlessly integrated parts of the business using HubSpot & Salesforce CRM systems, streamlining operations, and enhancing customer relationship management.
- **Compliance Protocols and Security Strategy**: Formulated and incorporated Sanctions & Anti-Money Laundering (AML) services into the Broker platform, keeping in step with FCA guidelines. Additionally, championed the company's transition towards a Zero Trust Architecture in Identity and Access Management (IAM), bolstering security through exhaustive automation strategies and vigilant monitoring.
- **Advocating AI Proficiency**: Organised and led multiple AI workshops, nurturing a corporate ethos centred on ongoing learning and technological innovation.

CCAI Architect - United Nations (08/2020 - 11/2020)

- **Pioneered CCAI for Global IT Support**: Spearheaded the creation and deployment of a Contact Centre AI (CCAI) solution using Dialogflow and BigQuery, significantly improving response and resolution times for IT support inquiries from UN members worldwide.

- **Implemented Real-Time Analytics**: Developed integrated real-time analytics feature within the chatbot system, providing instant data insights to optimize decision-making and continuously enhance service efficiency.

Lead AI Architect - Capita PLC (08/2018 - 01/2020)
- **Unified AI Platform Migration**: Orchestrated the digital transformation of around 20 AI companies within the group, transitioning them to a cohesive data platform in a multi-cloud environment, thereby streamlining operations and enhancing inter-company collaboration.
- **MLFlow Pipeline Implementation**: Led the deployment of MLFlow pipelines, revolutionising key systems including Vetting, HR, and Payroll, resulting in increased efficiency and precision.
- **Collaborative Data Science Platform**: Created an integrated environment using Databricks and Snowflake, fostering seamless collaboration between data scientists and platform engineers, and spurring innovation.
- **Automation Across Systems**: Initiated extensive automation in Infrastructure, Data, and MLFlow pipelines, substantially reducing manual intervention and the potential for errors.
- **Enhanced Security and IAM Strategy**: Formulated and implemented an IAM strategy, strengthened platform auditing, and bolstered security with SIEM and SOC measures.
- **Consultancy Technology Strategy**: Guided the technological direction for a nascent in-house consultancy, laying the groundwork for sustained innovation and business growth.

Lead Enterprise Architect – Homeoffice UK Gov (03/2016 - 01/2018
- **Central Data Platform Initiative**: Led the development and deployment of a central data platform, revolutionising policing and border control operations, notably reducing waiting times and accelerating passport processing.
- **Strategic Cloud Migration**: Guided a critical transition from Crown Hosting to public cloud infrastructure, enhancing security, automation, and deployment efficiency for government digital services.
- **POLE Data Model Adoption**: Oversaw the implementation of the POLE (People, Objects, Location, Entities) data model across various government departments, streamlining operations and improving data management practices.
- **Advancing Automation and Blockchain**: Drove a wide-ranging automation strategy and piloted a Blockchain project for passport and visa verification, investigating both public and private blockchain solutions to augment security and operational efficiency.

Lead Solution Architect – Metropolitan Police (06/2014 - 10/2015)
- **Central Data Platform Initiative**: Led the development and deployment of a central data platform, revolutionising policing, and border control operations, notably reducing waiting times and accelerating passport processing.
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Solution Architect – RGA Reinsurance Group of America (05/2010 - 06/2014)

- Automated Electronic Health Records (EHR) Natural Language Processing (NLP) Platform, streamlining the actuarial audit process and enhancing data accuracy and accessibility.

Architect/Developer - BBC (12/2009 - 03/2010)
- Spearheaded the digitisation of the largest television archive, enabling real-time access and significantly enhancing content availability.

Architect/Developer - Deloitte (06/2009 - 12/2009)
- Engineered a sophisticated royalty platform for the Phonographic industry PPL, streamlining financial operations and ensuring accurate royalty distributions.

Developer – Dun & Bradstreet (10/2005 - 01/2009)
- Instrumental in the development of a comprehensive Company Due Diligence Platform, facilitating more informed business decisions through thorough analysis.

Lead Developer – RGA Reinsurance Group of America (07/2004 - 06/2005)
- Pioneered the construction of the Automated Underwriting Rules Engine (AURA), revolutionising the underwriting process with increased efficiency and consistency.

Technology

Architecture	HLD, LLD, Agile, Enterprise, Solutions, Technical, Infrastructure, Data, ML/AI, GenAI, IAM, Security, Microservices, Docker, Kubernetes, API-Gateway, gRPC, Parquet, JSON, YAML, XML, Protobuf
IAM & Security	SSO, AUTH, RBAC, REST, Zero Trust, Encryption, Azure AD B2C, PAM, RBAC/ABAC, Prompt Injection/Jail-Breaking, Anomaly Detection, AI, Firewalls, Guardrails, OAuth, OIDC, SAML, JWT, HashiCorp, KeyVault, CyberArk, Threat-Modelling, Penetration Testing, SailPoint
Cloud, DevSecOps	GCP, AWS, Azure, Render, Railway, Colab, Hybrid(IaaS, PaaS, SaaS, AIaaS, AKS, EKS, Cloud Run, GitHub, JFrog, CloudFormation, ADO, VPC, IaC(Terraform), CI/CD, FinOps, ELT, EL+T(Live Tables), Airflow, Airbyte, MLFlow, Observability & Control, AWS Lambda, Amazon S3, AWS CloudTrail, AWS Config, AWS CloudWatch, AWS Step Functions, Azure Functions, Azure Logic Apps, Azure Event Grid, Azure Monitor, Azure Active Directory, Google Cloud Functions, Google Cloud, Pub/Sub, CDK, HA/DR, Monitoring, Prometheus, Grafana, App Insight, Splunk, Datadog, Ansible, Puppet, Chef, Salt Stack Monitoring
Data Curation & Governance	Kafka, EventHub, Event-Sourcing, CQRS, Databricks, PySpark, Azure Datalake, Blob Storage, Cloud Storage, BigQuery, Cosmos DB, DBT, Great Expectations, Snowflake, Neo4j, VectorDB, Provenance, Lineage, DQ, Curation(Unity Catalog), Live Tables, GDPR, PCI DSS, Avro, ORC, Apache NiFi, Apache Atlas, Apache Kafka, Apache Hadoop, Hive, HBase, Google Cloud Dataprep, AWS Glue, AWS Data Pipeline, Datawarehouse, Lakehouse, MDM, R Shiny, Qlik, Looker, ELK
CRM	Salesforce, Novidea, HubSpot
AI-Models	GPT-3.5-Turbo, GPT-4-Turbo, GPT-4-Vision, Text-Davinci-003, TTS, Wisper, DALL.E 3, Palm 2, Claude 2, Llama 2, Mistral, Zephyr
AI Frameworks & Patterns	SOTA, Dialogflow, Langchain, Langflow, Flowise, Chainlit, LangSmith, LangForge, LangchainHub, LlamaIndex, Vertex AI, Bedrock, Hugging face, Functions Calling (OpenAI), Prompt Engineering, RAG, ReAct, MRKL, Agents, Chunking/Splitting, Embeddings, Chatbots
Blockchain	Identity, Bitcoin, LightningNetwork, Web3, Ethereum, Solidity
API's, Programming & Frameworks	Python, PyTorch, TensorFlow, Java, JavaScript, Go, HTML, Node, React, Spark, REST, Functions, Kafka, EventHub's, Event Grid, Pub Sub, GraphQL, APIM, Apigee, Angular, Vue.js, Express.js, Spring, Spring Boot, .SOLID, WebAPI, ASP.NET, Flask, Django, gRPC, Protocol MediatR, NoSQL(MongoDB, Couchbase, Cassandra), SQL(MySQL, PostgreSQL, SQL Server), Time-series(Influx DB, Timescale DB), Graph(Arango DB, Tiger Graph), BAIN, NewSQL(Cockroach DB, Google Spanner), Elasticsearch, Logstash, Kibana (ELK Stack), Apache Solr, Open Tracing, Open Telemetry Buffers, Thrift, Apache Avro, RabbitMQ, MQTT
IoT	Raspberry PI, ESP32, Arduino, TinyML, LoraWAN