

Curriculum Vitae: Alexander Adu-Sarkodie

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Experience

With 15+ years of experience and a career dedicated to advancing software engineering and technical leadership, I am excited to bring my expertise and strategic vision to a forward-thinking enterprise where innovation, scale, and engineering excellence drive transformative outcomes.

My background includes developing cutting-edge solutions across aerospace, defence, eCommerce, government digital services, banking, retail, energy and global events. **Repair Smart** is a predictive maintenance platform co-developed with BAE Systems and Airbus, which optimises aircraft servicing and reduces downtime. Additionally, my work on **StrikeNet**, a Digital Twin platform for the UK Ministry of Defence, demonstrates my ability to deliver complex, high-impact systems that enhance operational efficiency. These experiences align closely with the focus on innovation, reliability, and digital transformation. Alexander has line managed, mentored, and coached near- and offshore teams in the UK, Canada, Austria, Spain, India, the US, Argentina, Slovenia, Estonia, and Romania.

My duties includes Hands-on/Hands-off duties, Architecture, Governance, Strategy, People Management, Capacity Planning, Mentoring, Coaching, Stakeholder Management, and also Development Initiatives for project planning, execution, code reviews, conducting metrics on test coverage, managing technical debt, timeframes for review and releases, developing engineering talent, hiring, and overall quality optimisation and efficiency of the systems and solution design architecture.

My leadership in award-winning technical projects - including recognition among the **UK's Top 50 Influential Technologists** - has honed my ability to mentor high-performing teams, drive agile transformation, and align engineering outcomes with business goals.

As Head of Software Development for the **FIFA World Cup 2022** in Qatar, I led mission-critical platform architecture, ensuring scalability and resilience for a global audience. At GDS/GCHQ, I served as Lead Technical Architect, designing secure, large-scale systems for government digital services. Further, as Tech Lead at Marks & Spencer, I spearheaded their **Digital Transformation**, modernising legacy systems to enhance customer experiences. This led to my promotion as Software Development Manager for the business. My tenure at the BBC further solidified my expertise in **Scalable, Real-time Digital Platforms**. I specialise in cloud-native architectures, AI/ML integration, and scalable software solutions - skills directly applicable to initiatives in customer experience, operational resilience, and next-gen technologies.

My specialisation extends to applied AI - designing, fine-tuning, and deploying LLMs, RAG architectures, and autonomous agent systems for enterprise impact. My focus spans three key areas: optimising RAG pipelines for precision retrieval, customising LLMs for domain-specific performance, and engineering scalable agent workflows that drive operational transformation. Across industries, I've implemented these solutions to automate complex processes, enhance decision-making, and deliver measurable efficiency gains - from intelligent customer service to enterprise knowledge management - exemplified in my extended **SPYDER** (<https://digital-twin-v2-chi.vercel.app/>) work, which followed **OFGEM's MHHR** project.

As well as supporting businesses in technical areas, Alexander has driven strategy changes within operations, transformation and architectural governance.

Alexander also holds an MSc in Mechanical Engineering and served as an Automotive Production Systems Engineer at Ford Motors in Enfield, UK.

Portfolio: <https://github.com/DataSolutionSoftware/Portfolio>

GitHub: - <https://github.com/kukuu?tab=repositories>

Career History

February 2025 to date

Director of Engineering and Data Strategy

Agile World Technologies - Ontario, Canada

<https://agileworldtechnologies.com/>

Team size:25

Key Responsibilities:

- Head of Platform, leading and developing the software and data engineering cross-functional teams - frontend, backend, DevOps, Data Science, QA, and AI/ML functions across cloud data, integration, and application development.
- Prioritising and owning the software development backlog in partnership with project managers and business stakeholders to ensure the technology aligns with business needs and market expectations.
- Championing the adoption of advanced technologies such as digital thread, AI, LLM Models, RAG pipelines, simulation tools, and VR to enable smarter product development and workflows.
- Owning the engineering systems budget, including licensing, resource planning, and commercial oversight
- Collaborating closely with the exec team and stakeholders on key strategic initiatives, serving as a Subject Matter Expert and Trusted Advisor.
- Overseeing the delivery of integration pipelines, data interfaces, API platforms, and front-end portals across mobile and desktop.
- Managing BAU support for core pipelines and ensuring service reliability, issue resolution, and continuous improvement.
- Driving agile delivery practices, sprint planning, and DevOps automation, including CI/CD and IaC.
- Championing architectural standards, code quality, performance, and security.
- Providing technical oversight and governance for internal and vendor-developed software.
- Owning key engineering KPIs, including system uptime, velocity, tech debt reduction, and deployment frequency.
- Implementing effective hiring, onboarding, and growth programs for a high-performing, inclusive engineering culture.
- Working with the CIO and senior IT leadership to align development capability with strategic business objectives.
- Developing go-to-market strategies and service propositions, and working across bids and client engagement.

Projects

Collapse Survival (Defence): A mobile app with threat alerts that can save your life, preparedness news, weekly military-style exercise simulations to improve your survival skills, best preparedness how-to information, and more - <https://apps.apple.com/ca/app/collapse-survivor/id6477384438>

Bulieve (Stock Market): is a social platform designed for stock market enthusiasts and investors to share insights, discuss market trends, and stay informed - <https://www.bulieve.in/hot-takes>

SPYDER (Digital Twin): A virtual replica of physical energy meters, using real-time IoT sensor data and AI-driven analytics to simulate scenarios, predict outcomes, and enable predictive maintenance. Adaptable across industries - from utilities and eCommerce to defence and aerospace - <https://digital-twin-v2-chi.vercel.app/>

Technologies:

Node, TypeScript, NextJS, Supabase, Python, PostGreSQL, MongoDB, Apache KAFKA, RabbitMQ, Apache Flink, PRISMA ORM, Microservices, REACT, NextJS, GraphQL, Websocket, EXPRESS, Prometheus, Elasticsearch, KABANA, Jenkins, Kubernetes, Docker, Logstash, Grafana, Render, AWS, Google Cloud Services, ARIMA, LSTM, PG Vectors, ,Datadog, Flink, TensorFlow, PyTorch, scikit-learn, LangChain, OpenAI APIs, MLOps, LLM, RAG, NLP, OWASP ZAP, SENTRY, SONARCUBE, Jest, Cypress, REACT, Tailwind CSS.

September 2023 to February 2025

Software Engineering Development Manager

EXPLEO Digital Engineering & Technology
80 Canon Street, London EC4N 0AN

Team size:18

Target areas - Aerospace, Maritime, Defence, eCommerce, Banking, Public Services

Key Responsibilities:

- Providing strategic engineering efforts in developing cutting-edge solutions for Compliance, Third-Party Risk Management, and AI-based innovation.
- Managing geographically distributed engineering teams, mentoring and coaching team members, and conducting appraisals.
- Guiding and mentoring engineers, fostering collaboration and growth within the team.
- Ensuring high-quality code and architecture while balancing innovation and scalability.
- Accountable for the optimisation and operations of the CI/CD and DevOps Pipelines.
- Enforcing Best Practices in code reviews, identifying, tracking, removing and escalating impediments, and governance while managing cross-functional and multi-supplier teams.
- Driving timely delivery by prioritising tasks, managing resources, and mitigating risks.
- Bridging communication between engineers, product teams, and executives to align on goals.
- Optimising workflows, tools, and Agile practices to enhance team efficiency.
- Recruiting top talent and cultivating a high-performing, motivated engineering culture.
- Staying informed of industry trends, regulatory changes, and emerging technologies to drive innovation and maintain a competitive advantage.
- Forecast future resource requirements, align resourcing strategies with stakeholders, and track objectives and key results (OKRs) to ensure project success.

Projects

Digital Twin (Ministry of Defence - UK)

This digital twin solution creates a virtual replica of the physical geographic environment, using real-time IoT sensor data and AI-driven analytics to simulate scenarios, predict outcomes, and enable predictive maintenance. The application transforms raw data into actionable insights for optimised operations and decision-making.

As Engineering Development Manager on the UK MOD's StrikeNet project, I helped to architect a defence-grade digital twin that virtualised combat systems, integrating real-time analytics and AI to enhance mission readiness.

The solution reduced operational risks by 30% while improving asset management and reliability, proving its value in high-stakes environments where cost efficiency and system resilience are critical.

Repair Smart (British Aerospace, Airbus, SPIRIT)

Non-Conformance Management Tracking (Repair Smart) software for the Aerospace Industry, Europe - A data harvesting AI engine for Quick Search for solution design templates which are reusable and automatically generated from stored procedures and algorithms. The software is designed to accelerate and automate repairs, reduce search time and improve efficiency.

Obsolescence Enterprise Management System (Defence - Atkins Realis)

The software offers a comprehensive database containing detailed information on building materials and electronic components, including specifications, lifecycle status and compliance data.

Achievements

- Defined and drove the technology vision, ensuring alignment with business goals while enforcing enterprise-grade standards for security, performance, and scalability
- Led end-to-end architecture for complex systems, from discovery to deployment, using Agile/DevOps/DevSecOps methodologies.
- Compliance-by-Design: Embedded security/privacy into SDLC (e.g., NIST, SOC2).
- Scalable Systems: Designed for 99.99% uptime with fault-tolerant architectures.

Technologies:

OOP, NodeJS, JavaScript, TypeScript, Express, Python, C#, Generative AI & NLP, LLM, Digital Twin, Apache KAFKA, AWS Services, Visual Studio, AZURE Services, Google Cloud Platform, Security Architecture, Design & Threat Modelling, Express, Websocket, OAuth, JWT, NextJS, Postgres SQL, NoSQL, REACT, REACT Testing Library, DevOps, DevSecOps, GraphQL, Jenkins, CMS, Postman, Version Control(GitHub and Bitbucket), Docker, Kubernetes, Prometheus, ELK Stack, HTML5, SENTRY, JIRA, TEAMS, Confluence, Cybersecurity, IoT.

June 2020 - September 2023

Head of Engineering

Pushologies Limited
Douglas, Isle of Man

Team size:34

Head of Development FIFA+ World Cup 2022 notification SaaS platform which transmitted rich interactive media to millions of global audiences. The platform is a Frontend self-serve AWS SaaS interface providing functionality for customers to send notifications to multiple devices. and work with our cloud platform and SDK to deliver our unique service.

Responsibilities:

- Responsible and accountable for technical delivery, leadership, architectural and strategic directions, end-to-end software development,
- Capacity planning, development initiatives for project execution, timeframes for review and releases, coaching and mentoring.
- Leading cross-functional Agile teams
- People's management, Hiring, Training, Development and Onboarding
- Working closely with UX and Product Owners to define user journeys, internal and external stakeholders
- Working with key stakeholders (FIFA, Coca-Cola, NBA, Hilton, FA, LPGA).
- Keeping abreast of new technologies and improving internal systems (Engineering Council Forums)

Technologies:

AWS Stack, NodeJS, Serverless, LAMBDA, PostgreSQL, TypeScript, KAFKA, KINESIS, Microservices, REACT, REDUX, GraphQL, SENTRY, Sonar Cloud, Docker, TDD/CI/CD, InVision, Git/Bitbucket/GitFlow, JIRA, iOS, Android, JIRA, Prometheus, GRAFANA and SLACK.

Dec 2019 - May 2020

Chief Technological Officer (Contract)

Bearings Point Media, London

Kemp House, 160 City Road - London EC1V 2NX

Team size:6

@London Tech Interview - https://www.linkedin.com/posts/alfiegeorgewhattam_londontech-londontechnology-techlondon-ugcPost-6694141986187833344-vaOF

Product - The ReadApp:

The app offers a reading Lounge for groups, where each Lounge provides content central to its interests and invites or accepts requests to access and pay for content in its community. Members pay to read and can chat and share comments in a discussion thread. The variety of lounges envisaged caters to different interests and provides a space for every reader to find an armchair they feel comfortable in. Other features include a NEWS API, Dashboard, Blogs, Editorials and Notification updates.

Responsibilities:

Working as a hands-on CTO (Startup), my duties included:

- Accountable for end-to-end software delivery, managing the overall technical quality of the output of agile development teams, including functional, code quality, test coverage, technical debt and overall quality of the system design and solution architecture.
- Strategic engineering direction, capacity planning, technical leadership, timeframes for review and releases

Technologies:

NodeJS, JavaScript, REACT/REACT Native, REDUX, TypeScript/NextJS, PostgreSQL, Digital Ocean, GraphQL/Apollo/HASURA, Docker/Kubernetes, TDD/Git/GitHub/CI/CD/JIRA, SLACK, Sentry/STRIPE, SIGIL/InVision, Android/iOS.

September 2015 - November 2019: Contract
Principal Development Lead / Architect

Projects:

Love Joint (<https://www.lovejoint.store/>)

Responsibilities: As Principal Development and Solution Architect, I led the end-to-end technical design and implementation of the e-commerce platform, ensuring scalability, secure payment integrations, and seamless user experience. I collaborated with cross-functional teams to align architecture with business goals and managed DevOps pipelines for efficient deployment.

Team size: 6

Achievements: Delivered a robust, high-performance platform that supported a 300% increase in user traffic post-launch, optimised page load speeds by 40%, and integrated a custom CMS for dynamic product management, directly contributing to rapid revenue growth and market penetration.

GCHQ / GDS - Zaizi (<https://www.gchq.gov.uk/> | <https://www.ncsc.gov.uk/>)

Responsibilities: Oversaw the architecture of secure, government-grade solutions for sensitive data handling, ensuring compliance with stringent regulatory standards (e.g., GDPR, NCSC guidelines). Directed agile teams to deliver scalable cloud infrastructure and AI-driven analytics tools for intelligence processing.

Team size: 18

Achievements: Successfully deployed a mission-critical system within tight deadlines, achieving NCSC certification and enhancing data processing efficiency by 50%. Innovated a microservices-based framework that reduced deployment risks and enabled real-time threat analysis, earning client commendation.

Flix Premiere (<https://flixpremiere.com/>)

Responsibilities: Architected the streaming platform's backend infrastructure, focusing on high availability, global content delivery, and AWS cost optimization. Spearheaded the integration of DRM-protected video streaming and personalized recommendation engines.

Achievements: Scaled the platform to handle 1M+ concurrent users during peak launches, reduced buffering by 30% via CDN optimization, and implemented AI-driven analytics that boosted user engagement by 25%, positioning Flix Premiere as a leader in niche film distribution.

Team size:12

Technologies

NodeJS,Express, OOP, JavaScript Frameworks, Isomorphic JavaScript, REACT, NEXTJS, REDUX, Storybook, GatsbyJS,GraphQL, Webpack, Web-services, REST, Websocket, APIs, PostMan,JWT, TDD, XP, BDD, CI/CD, Jest, Enzyme,Chai, Gulp, Docker/Kubernetes, Mobile First ,HTML5, Style Components(CSS-in-JS), MySQL, MongoDB. Crafter (Headless CMS).

August 2012 – September 2015 :

Marks and Spencer
Software Engineering Development Manager
<https://www.marksandspencer.com/>

Team size: 42

As a member of the Strategic Leadership Technical Team at Marks and Spencer's e-commerce platform, I helped with the digital transformation of its e-commerce platform and also established its first in-house high-performance Engineering and Academy teams to support the business working as Software Engineering Manager.

Responsibilities:

- Lead Developer iPad, omnichannel, Checkout and Loyalty schemes platforms
- Technical leadership across multiple Agile cross-functional teams. Hands-on development.
- Managing relationships across project teams within the business portfolios.
- Managing Performance of the Software Engineering team. Including offshore.
- Responsible for ensuring onboarding, Training & Development of the Software Engineering Team.
- Serving as Agile Coach, and Advisor and continuously aligning the team to business mission.
- Ensuring the provision of credible development platforms, Automated Testing, Quality Assurance, Build processes & Architecture, Tools for the teams and use of Best Practices in Agile/Waterfall development and Software Development Life Cycle (SDLC).
- Reporting on key delivery metrics including project progress and resource usage to business. Working with Platform and Release Management teams to ensure completion of process life cycle and delivery of product and engage with customer concerns.
- Working with offshore and third parties to supply development and content resources for M&S.com
- Career counselling managing expectations, 1-2-1, appraisals, mentoring and coaching Software Engineers.

Technologies, and Development Practices:

JavaScript, JavaScript OOP, AngularJS, NodeJS, GULP/GRUNT, Cordova, MySQL, WCS, AEM, XAMPP, BackboneJS, jQuery & jQuery Mobile, PHP, OOPHP (PHP5), BDD, TDD, HTML, HTML5, Bootstrap, Jenkins, GIT, CSS3, LESS, SASS, Responsive Design & Mobile Design, Lean Agile Development, Continuous Development, Continuous Integration.

January 2000 – July 2012

British Broadcasting Company (BBC) - White City H/Q, London
Senior Software Engineer

A member of the technical team that started digital broadcasting and transmissions on the Internet at the BBC. A pioneering revolution that changed the country. Alexander worked on the iPlayer as a Software Engineer then and was responsible for integrating the “**Send to a Friend**” module in 2007.

Projects: News App - BBC Mobile Platform, Learning – The National Curriculum, Great Britain: <http://www.bbc.co.uk/schoolradio/> , iPlayer – <http://www.bbc.co.uk/iplayer>
BBC News Interactive - Hull Centre , Broadband Interactive TV Platform.

Technologies:

OOP, JavaScript, iPlayer, MVC Frameworks (PHP5 - Zend), XSLT, XHTML, HTML5, LESS, Media Queries, Responsive Design, Apache, Flash, AMD, AGILE, BDD, TDD, AKAMAI, Photoshop, QUnit, SVN, GIT, Tortoise, JIRA, Eclipse, TRAC, Confluence, AGILE, CI/CD

JAN. 1999 - to date:

Visiting Lecturer – Business Computing - The City Literary Institute (<http://www.citylit.ac.uk/>).

Subject Area: Programming, Digital Transformation & Emerging Technologies

Jan 1997 - Jan 1999

Ford Motors - Enfield, England, United Kingdom
Automotive Production Systems Engineer

Responsibilities

- Data Mining
- Digital transformation and automation of Ford Motors' manual production workflow schedule for its parts and components for Ford and Jaguar Land Rover.

This is what John Cox, Plant Manager, Ford Motors Enfield, Middlesex London had to say:

"I had the pleasure of working with Alexander during his period here at Ford Motors in Enfield as an internship student as an Automotive Production Systems Engineer from January 1997 to January 1999. Alexander did an outstanding job in his assignment. He carefully planned out his strategy, investigated problem areas and communicated his actions effectively. He quickly became an integral part of our team very quickly and participated in other activities outside of his area of expertise to further enhance his time here.

The project Alexander completed has been successfully implemented. With his assistance, we successfully passed an external audit for ISO9000 certification and have established a new benchmark that other areas of our location globally will be following."

Qualifications:

- MSc Telematics (Computer Systems Engineering, Data Communications and Network Engineering.) - School of Electrical & Electronic Communications, Dept. of Computer Science, Middlesex University, London.
- MSc Engineering - Belarus State University, Minsk.
- Diploma Russian Language - Minsk, CIS
- Teacher Training Certificate (Adult Education) - UK. The City Lit Institute - London.

Membership Professional Bodies:

- Member British Computer Society (MBCS - UK)
- Member Institute of Learning (MifL - UK)
- Associate Member Institute of Engineers (AMIEng - UK)

Other - Bilingual, fluent in English, Russian and conversational French.