CV: Marco Christoforou

PROFILE SUMMARY

I am a software/DevOps engineer with excellent people and technical management skills developed over 25 years in a variety of technical and management roles across a wide variety of technologies and industries in the public and private sector. By drawing on my experience and education in physics to Master's level I am able to quickly add value to any project.

UNIQUE QUALITIES

- Innovative: See my portfolio of work below. Also note the patent for the product I architected, designed and developed presently being sold through BluGem Communications (www.blugem.com), the company I co-founded and where I held the post of Technical Director.
- Delivery Focused: I focus on delivering quality products to customers making pragmatic decisions about functionality when timescales are challenging. I use my excellent social skills to build trust and manage expectations.
- Constant Learner: Always up to date with the latest technology, process, procedures and best practices in system and software engineering, usually undertaken in my own time. Also in current team since April 2018 designing and developing cloud PaaS for NHSDigital.
- High Emotional Quotient: My interest in what drives humans pursued through an interest in psychotherapeutic techniques such as Mindfulness and Transactional Analysis has enabled me develop excellent EQ helping me greatly in people management. I use unorthodox approaches to people management that builds their self-esteem and sense of pride in their job in order to drive a keenness to produce good work with attention to detail.
- Rule Breaker: I am unconventional in my approach to challenges and will work around rules and obstacles that hinder progress towards my delivery targets while always considering privacy and security.
- Quick Learner, Open Minded and Original Thinker. My foundation in Physics underpins my ability to quickly break a problem down and find innovative solutions that can be delivered on time and to budget.
- Entrepreneurial: I continue to develop new ideas and develop products and services to maximise my income streams.

PORTFOLIO OF WORK

- Websites: dmd-data.online, ipump.uk, ipump.org.uk, maestrodataservices.uk, [cgm.ai](cgm.ai).
- Patent: www.ipo.gov.uk/p-ipsum/Case/PublicationNumber/GB2427328
- Met Office work: http://slideplayer.com/slide/9084574
- Thesis: books.google.co.uk/books/about/Algorithms_for_Automatic_Scene_Interpret.html?id=Qd5CYAAACAAJ
- Company Directorships: https://companycheck.co.uk/director/906468076

TECHNICAL SKILLS AND EXPERIENCE

- Technical Management and Team Management
- System and software design
- Machine Learning (Neural Networks)
- Security concepts such as Bastion, Security Groups, TLS, VPN access through OTP (one-time-password)
- Cloud architecting in Amazon Web Services (AWS). Including many services such as EC2, Security Groups/Firewalls, Certificate Manager, Lambda, VP, auto scaling, recilience.
- Infrastructure as code (IaC) using Terraform for repeatable, reliable cloud infrastructure management.
- Docker containerisation.
- Kubernetes container orchestration, applied in the cloud using AWS managed services (EKS).
- DevOps Engineering, Continuous Integration and Deployment (E.g. Jenkins, TFS, GitLab)
- Monitoring with Grafana, Prometheus, Instana
- Extensive knowledge of open source development ecosystems (E.g. JavaScript, Angular.js, Node.js)
- Extensive knowledge of Microsoft development ecosystem (E.g. SQL Server, C#, .NET Core)
- Test Automation (E.g. Selenium, NUnit, Cucumber)
- Database design and development (SQL Server, Oracle, MongoDB object database)
- Solutions Architect (E.g. SaaS, PaaS, ReST API)
- Software Engineering (E.g. UML, OOD, OOA, Android, BDD, cross platform, design patterns)
- Productivity tools such as Slack, Confluence
- Agile, Scrum, Project Management

OVERVIEW OF KEY ACHIEVEMENTS

- Recently challenged with learning new technologies and applying in the design and development of new PaaS hosting environment for the NHS. Including communicating of change in work practices towards DevOps. Focus on security due to the management of confidential data. Resilience, scalability and cost savings.
- Designed and delivered new reporting system for South West Ambulance service
- Joined NHS Digital and implemented major overhaul of work practices, methodologies and technologies in order to establish continuous service improvement, improve data quality, and drive up productivity giving the tax payer better value for money.
- At NHS Digital I architected and managed the development of a software-as-a-service (SaaS) architecture, supported the development through full automated continuous integration and deployment environment using open source free technologies resulting in faster development and delivery at minimal cost.
- Built a business from small personal investment to turning over approximately £300,000 per annum, employing four full time staff and additional contractors. The company continues to operate now with 11 full time staff.
- Communicated complex technical concepts to staff at a wide variety of levels resulting in securing two major UK based blue chip companies as well as many other companies worldwide
- Designed architecture and developed and patented a distributed, multi-threaded application capable of handling large volumes of data records (over 50k per day) with a unique selling point that drew customers away from our main competitor and the market leader.
- Developed a working prototype of a novel insulin pump from first principles in my spare time. Extended my work to develop commercially available product; ipump.uk learning about the development and approval of medical devices.
- Developing continuous glucose monitoring system consisting of iPhone app, JavaScript firmware on chip, Bluetooth LE, Near Field Communication and backend machine learning for predictive alerts. See cgm.ai.

EMPLOYMENT EXPERIENCE

Senior Software and DevOps Engineer, NHS Digital   **Feb 17 to date**

- Currently working in transformational team working with Systems Designer designing, developing platform-as-a-service (PaaS) to host new systems and migrate legacy systems to with focus on devOps, containerisation, and everything as code.
- Investigated and developed test framework based on Behaviour Driven Development (BDD).
- Quickly added new feature to Repeat Call Service and automated testing.
- Added automated tests to Breast Screen Information Service.
- Lead on load testing on new Information Governance application, and expanded automated test framework.

Principal Software Engineer, South West Ambulance Service Foundation Trust   **Sept 16 to Jan 17**

- Designed architecture and procured third party software to deliver a platform as a service (PaaS) integrated reporting platform.
- Platform was designed to allow basic users, analysts and software developers to deliver reports required by the Ambulance service more quickly and with fewer staff.
- Established development team and Agile work practices.

Technical Specialist acting as Development Team Manager, Technical and Solutions Architect, NHS Digital   **Nov 13 to Sept 16**

Main Responsibilities;
- Team Management, including professional development reviews (PDRs).
- Innovation of new software applications for service delivery and continuous service improvement.
- Technical strategy and technical and solutions architecture.
- Management of change to up-to-date work practices, technologies and methodologies.
- Management of workloads and prioritisation of work undertaken by the team.
- Technical consulting and mentoring of team members in enterprise technologies.
- Management of design, development and support tools and processes.

Key achievements;
- Performance managed two staff members with low skill and productivity levels to achieve effective levels of delivery and value to NHS Digital
- Challenged existing work practices, technologies, data quality resulting in significant improvement in productivity and work load management across the wider service as well as the immediate team.
- Set-up Continuous Integration and Deployment environment including automated systems tests (including UI) in order to drive up productivity and software quality and shorten delivery times for new features.

- Drove up staff skills levels to add value for the tax payer, turning Access developers in to productive software engineers.
- Established new team working practices and processes using Agile Methodology.
- Established the use of enterprise tools for work management.
- Introduced and mentored team in the use of Enterprise development tools and products.
- Technical management of major national interface with central NHS IT system known as The Spine via REST API.
- Liaised between development teams during the development of enterprise interface for data exchange between two systems using Agile Methodology.
- Design and development of applications to replace old technology legacy systems and establish a data warehouse. Including Software-as-a-Service framework to deliver applications to service team.
- Staff performance reviews completed on time with measureable objectives.
- Drove through significant change in work practices in order to establish quality assurance throughout the business processes.

Technical Director/Co-Owner and Founder, BluGem Communications Ltd.   **Dec 04 to Oct 13**

Responsibilities;
- Technical management of all aspects, including design and development, of test call generation system for mobile and fixed line network revenue assurance.
- Management of system delivery worldwide.
- Management of customer support.
- Contract and SLA negotiations with customers, worldwide.
- Permanent and contract staff management.
- Prioritisation and scheduling of work based on customer demands.
- Strategic planning of new functionality and innovation to ensure maximum sales potential.
- Recruitment and management of staff.
- Financial management.
- Customer demonstration, both at customer sites and via web based systems such as Skype and Webex.
- On-going design and developed of software product.
- Integration of third party products.
- Customer training; web based and onsite.

Key achievements;
- Designed novel network distributed, multi-threaded software system capable of handling over 50,000 calls per month in real time.
- Innovation in product area resulting in patent being granted and capture of client business from main competitor.
- Invocation in use of third party products in order to minimise costs and thereby undercut main competitor.
- Training of customers from different cultures (Sudan and Sri-Lanka), remotely, on-site and at hired venues.
- Design and development of a reliable high demand, real-time, always-on system resulting in minimal demands on support.
- Gaining of major UK customers; 3UK and Vodafone.
- Successful negotiations of contracts with highly demanding client (3UK) with the engagement of corporate lawyer.
- Delivery of large systems to under developed countries such as India, Sri-Lanka, and Philippines.
- Remote deployment and/or upgrade of systems worldwide (e.g. Qatar).

Freelance Consultant Software Engineer, Self-Employed   **July 99 to Oct 13**

Responsibilities;
- Gathering and understanding of customer requirements.
- Delivery of software systems to time and budget.
- Cost and time estimation of work.
- Financial management.
- Customer support and management.

Key achievements;
- BT Syntegra, NHS Spine Project. Consultancy requiring collection of requirements for change management team, making recommendations and implementation of customisations to change management tool to the needs of the end user.
- Gain work through word of mouth. Including on-going work for Dutch based financial services company (AlmBrand) and local energy company (Zero Carbon Future), developing initial prototype for novel remote meter reader.

- Developed novel micro pump into product for medical research for U.S. client (see www.ipump.co).
- The Met Office UK. Designed architecture for a new framework to support the integration of weather models in order to improve the accuracy of weather prediction.
- ATIO Corporation. Made recommendations on software development processes and procedures in order to improve software quality. Successfully delivered new features and trained new developers.
- Serena International, consulting department. Engaged in a wide range of projects, as requested by the client, in support of extending and enhancing their change management product.
- Alenia-Marconi. Assisted in the development of telecommunications switch embedded software. Found an innovative way to significantly reduce development and test time through the development of a PC based test harness.
- Identified need for a specialist software integration which I developed in my own time then subsequently sold for £6000.
- Estimation of costs and resourcing for fixed price contracts requiring outsourcing of work.

Consultant Software Engineer, America Management Systems   March 98 to June 99

Responsibilities;
- Design, development, documentation and implementation in the financial sector.

Key Achievements;
- Undertook function point analysis and delivered a report based on the results for recommending human resource requirements for the delivery of a client project within a specified timescale.
- Delivered detailed design specification for the graphical user interface design and back-end database interactions cited by the client project manager as an example of "how this kind of document should be written".
- Lead small team of developers implementing the graphical user interface for the system.

Higher Scientific Officer, Home Office   Nov 95 to Feb 98

National Automated Fingerprint Identification System

Responsibilities
- Technical audit of external contract engaged by the Home Office.

Key Achievements;
- Engaged external suppliers to technically access and contrast workstations successfully secure non-chargeable upgrade.
- Identified flaw in image capture device and presented my findings in a report that resulted in reassessment of the solution by the contractors.
- Proposed and implemented automated way of determining best image quality for users, reducing time and increasing accuracy of collecting statistics and calculating results.

Systems Engineer, Electronic Data Systems   Aug 94 to Nov 95

- Software analysis, design and development in the telecommunications sector.

Research Assistant, King's College London   Oct 93 to July 94

Image Processing Group

- Developed and completed a suite of image conversion tools well ahead of expected delivery time.
- Applied novel neural network technique for target identification from infra-red image system to be installed in Euro-fighter.

Specialist Software Support Engineer, Nortel   Dec 88 to Sept 90

- Customer facing role, diagnosing and fixing system and software issues via patches written in machine code on telecoms switches.
- Coordination of field trial of software before release to the market on sites agreed with end customers.
- Project management of final release of European software stream.

Broadcast Engineer, BBC   Aug 87 to Nov 87

- Responsibility for technical quality monitoring of BBC News output and maintenance of television equipment where issues were identified.

EDUCATION

M.Phil., *Algorithms for Automatic Scene Interpretation of Digitised Images*, Physics Department, King's Colleges, University of London, 1995 (Search for title in Google Books).

B.Sc. (Hons.), Physics, 2(1), University of Newcastle-upon-Tyne, 1987

VOLUNTEER WORK

Diabetes website for Royal Devon and Exeter Hospital: www.diabetesgenes.org/content/mody-probability-calculator

OTHER SKILLS AND EXPERIENCE

- Completed 2 day Mental Health First Aider course.
- Physics teaching to 'A'-Level at private and state schools.
- April 1994 to July 1994, Backpacking in India, Australia, USA and Hong Kong.

INTERESTS

Science and technology, current affairs, listening to Radio 4 and the World Service, film and media.