

Thomas Pedley

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Education

Higher Education: BSc (Hons) Computer Science – 1st class with honours (University of Hertfordshire)

'A' Levels: Economics and Business, Geography, Mathematics, General Studies

GCSEs: French, Geography, Information Studies, Business Studies, Design & Technology, German, Mathematics, Science (Salter's double award), Statistics, English, English Literature

Language Skills

English – Fluent.

French – Can read and hold simple conversations.

German – Some basic ability to read and understand conversation.

Professional Experience

Profile

I am a self-motivated and hard-working software engineer. I have a passion for developing optimised, high performance, public facing systems in both bespoke and standard environments with a range of different (mostly object oriented) languages. I am a hands-on, technical software developer at heart.

I have a talent for designing and implementing highly scalable and performant middleware and back-end systems.

When faced with a clean slate, my expertise, experience and passion for delivering clean, functional and performant systems allow me to design and deliver robust and complex systems. My up-to-date knowledge of current technologies means that I am able to quickly familiarise myself with a pre-existing codebase and make immediate improvements, which proves to be useful when being engaged with legacy systems. In such situations, I am able to identify problem areas and fix them before they become an issue.

My passion extends beyond software into hardware and system administration as I have a keen desire to learn about all things related to computer science and information technology.

I have been programming in Java for many years and in more recent years I have been developing software with Microsoft languages and tools (.NET, C#, Workflow, WCF and TFS). I have also been developing applications for mobile devices (J2ME and iPhone). I have a great interest in developing object-oriented systems, be they public facing or used as back-ends or tools. I am also fond of creating well-structured and useful APIs. I have an absolute passion for creating clean and organised software that is well documented. I work on many personal projects in order to learn new and improve existing skills.

Key Skills

- **Programming languages:** J2SE, J2ME, C and C++, Objective-C, BASH, .NET (C#, VB), SMIL, ASP, PHP, CSS, Eiffel, LISP, SQL, JavaScript, Swift.
- **Program design:** UML, RMI, WF, WCF, user interface design and creation.
- **Networking:** IP networking, TCP, UDP, Ethernet, Token ring, RPC, DHCP, DNS, ATM, SONET, ASN.1, BER.
- **Security and encryption:** Feistel and block algorithms, (3)DES, TEA, asymmetric encryption (RSA).
- **Tools:** Eclipse, MTJ, Xcode, Microsoft Visual Studio, Team Foundation Server and Client, Netbeans, BlueJ, Microsoft SQL Server, Microsoft Access, Macromedia Director, Adobe Premiere, WebStorm.
- **Computer logic:** Logic gates, binary data representation, some CPU and system design.
- **Multimedia:** Speech synthesis, animation techniques, video editing and creation, sound manipulation.
- **UNIX:** System administration, system programming.
- **Work skills:** Team working, project planning and management, eliciting requirements from clients.
- **Integration:** One of my specialist areas is in integrating with third parties and their software systems.

Career History

2016 – Present Certified Senior IT Specialist, IBM United Kingdom, London

Rather than sit idle as IBM's involvement in M-Pesa transitioned to another supplier, I proactively searched for my next opportunity within IBM by using my network of contacts. Shortly after, I was engaged on a project for Maersk, a client of IBM. This project involved re-writing legacy systems to conform to the "always on" ethos where systems never go offline (either through fault or maintenance). The existing legacy system could not cope with the volumes of traffic it had to deal with and frequently went offline due to system faults.

I was sought out by an architect, with whom I had previously worked, to join the team in its formative period. I was asked to take on the role of lead micro-services developer and designer, working with and mentoring a junior developer.

In this role, I have broadened my exposure to technologies (Node.JS/ JavaScript, git version control, Jenkins, Sonarqube, Jira, Confluence) and have deepened my understanding of agile methodologies (specifically scrum). Additionally, I have been given the opportunity to hone my leadership skills by being a mentor to a budding developer.

2009 – 2017 Certified Senior IT Specialist, IBM United Kingdom, London and IBM India

At IBM I continued to work on the M-PESA project by improving the performance of key software components. Some of my achievements and responsibilities include:

- As a deployment technician, I played a key role in upgrading and migrating M-PESA from the legacy system developed by Sagentia to the new system developed by IBM.
- From a technical perspective, I single-handedly delivered M-PESA to Egypt for the pilot launch. This involved commissioning the servers from the metal up to the VMT application from scratch and ensuring that the system was fully functional before hand-over.
- Designed, developed and implemented the international money transfer mechanism for M-PESA, which integrates M-PESA with third parties to allow the receiving of funds from other countries.
- Mentored and managed a team of developers to deliver the M-Shwari project whilst also performing a large portion of the development myself. This project integrates M-PESA with a bank to provide savings and loans functionality.
- Designed, developed and implemented a substantial redesign of the transaction processing component of M-PESA to raise the transaction volume from a maximum of approximately 260 transactions per second to around 400 transactions per second.
- Successfully led a multi-disciplined team of 35, which consisted of developers, testers and business analysts to deliver M-PESA to India. This involved eliciting requirements from the client, translating them to technical deliveries and then helping the team to implement, test and deliver said requirements.
- Redesigned and developed the bulk transaction processing module of M-PESA to uplift the transaction processing capability from 1 transaction per second to over 200 transactions per second.
- Designed, and developed the "Customer Name Lookup" functionality, which allows customer details to be retrieved prior to submitting a transaction. This is aimed to reduce instances of transactions being conducted against the incorrect second party.

- Upgraded and migrated the source control and project lifecycle management system for the entire team twice (TFS 2008 -> 2010 and then 2010 -> 2013) to enable the team to become more productive and to use newer technologies for development (.NET 4).
- Designed, developed and implemented an automated deployment strategy and mechanism for new environment builds. Prior to this, a new environment could take upwards of a week to commission and require 5 skilled technicians to be involved full-time. Environments can now be built with the press of a single button in the space of approximately 30 minutes.
- Designed, developed and implemented the Interactive Voice Response systems, which were used as the main input channels to M-PESA for both Egypt and India.
- Bestowed onto me was the sole responsibility of maintaining and developing the M-PESA software embedded onto the SIM cards in all markets.
- Developed an innovative way of re-establishing a relationship between orphaned SIM cards and an M-PESA system, which greatly improved productivity of the test teams and reduced costs as previously orphaned SIM cards were deemed to be useless and were disposed of.
- Designed, developed and implemented the “dividend payment” process via M-PESA for Safaricom. This allowed an unprecedented volume of transactions to be paid in a single operation over a short period of time.
- Mentored the software configuration management team to provide a robust process for delivering builds to environments.
- Led the deployment team for all markets until I had educated team leaders to a sufficient standard that satisfied me to be able to hand over responsibilities.
- Designed, developed and implemented a mechanism to migrate highly sensitive and secure data from one platform to another without compromising the security of the data, the source platform or the sink platform.
- Achieved a globally recognised certification in IT specialism from the open group.
- Designed and developed bespoke testing automation tooling for M-PESA handset transactions.

2007 – 2009 Software Engineer, Sagentia, Cambridge

Primarily concerned with the design and development of functionality for the original and global leader in mobile money transactions, M-PESA.

- Thoroughly documented the entire installation procedure for the M-PESA system.
- Developed and documented the interface for the interactive voice response API between the M-PESA system and external client applications.
- Implemented and managed in-house documentation management system (Microsoft SharePoint).
- Maintained in-house source code and defect management system (Microsoft Team Foundation Server).
- Designed source code structure, branching strategies and maintained build scripts.
- Administrator of in-house infrastructure (Active Directory and certificate authorities).
- Developed and documented a graphical configuration editor and validation tool for all elements of the M-PESA system. This tool greatly reduced errors made when deploying updates to the system and provided a central point for administering all servers involved in the deployment of M-PESA.
- Responsible for designing and developing a framework capable of performing tasks within the M-PESA system en masse (e.g. bulk sending of messages to customers, bulk registration of customers, etc...)
- Designed and developed secure handset applications for Java (J2ME) and iPhone platforms.
- Worked with agile software development techniques.
- Deployed live (customer facing) and in-house M-PESA installations.
- Took an active role in workshops designed to solve problems faced by the under-banked population of America.
- Performed knowledge transfer of M-PESA system to IBM offshore team.
- Developed tools for and conducted performance analysis of the M-PESA system.
- Provided training to new starters.
- Designed, developed and implemented a system for recycling MSISDNs (phone number allocations) on M-PESA.

2007 – 2007 Software Engineer, 1Spatial, Cambridge

- Developed "Land Registry" software for the Irish land registry website. This involved working with complex algorithms to segment land into smaller geometries to denote ownership.
- Designed and implemented custom .NET based test harness and framework.
- Responsible for fixing bugs discovered by test harness.
- Responsible for working through and fixing existing backlog of bugs.
- Mentored university placement student.
- Exposure to Oracle PL/SQL.

2006 – 2007 Software Engineer, Jagex, Cambridge

- Developed high performance software to serve the RuneScape.com website.
- Coordinated design and development of systems with multiple teams and departments.
- Worked with very low level (sometimes native) Java.
- Maintainer of many proprietary Java library classes used by all software development teams.
- Designed and developed bespoke language and parser for dynamic web content rendering.
- Designed and developed the RuneScape knowledge base.
- Designed and developed a search engine capable of searching the entire knowledge base (with wild-cards and Boolean search logic) in fewer than 6 milliseconds – up to 700 times faster than the existing search engine implementation.
- Designed and developed a distributed health monitor framework for all hosted systems.

Autumn 2004 Embedded Software Programmer, Team Xecuter

- Worked freelance on a single project to extend a legal Microsoft Xbox firmware replacement (Cromwell – developed by Xbox-Linux, of which I am a member) allowing for the re-programming of “Xecuter” mod-chips for the Microsoft Xbox.
- Implemented a simple web server in C capable of sending and receiving data from clients.
- Integrated a TCP/IP stack with the existing Xbox firmware.

Summer 2004 Software Customisation and Packaging Technician, Friendtech Computer, Ltd.

- Designed, developed and packaged a media-centric Xbox Linux distribution.

2003 – 2004 Chief Xbox Platform Developer, Gentoo Technologies Inc.

- Responsible for creating a version of Gentoo Linux for the Xbox.
- Wrote Linux system tools for accessing and controlling various pieces of Xbox hardware.
- Featured as “Gentoo Developer of the Week”, September 9th 2003.