MARK DOUGLAS
Twickenham, London, UK
Mobile: *(not listed on my website)*
marky@markywastaken.net

Work Experience

National Air Traffic Services – Software Engineer, simulators

November 2008 – August 2012

- Electronic Flight Data
  - This project replaced paper flight strips (which contain details about each flight) with electronic versions, interacted with using a stylus on a touchscreen
  - Lead developer for our simulated EFD system
  - Designed and implemented changes of network interfaces to other components
  - Rapid prototyping with Human Factors – making changes to the system within hours as a result of user workshops and demos, and assisting UI design
  - Large-scale prototyping with Research & Development – adding large chunks of functionality for measurement in full simulations
- AutoSim
  - This simulator component used artificial intelligence to emulate a controller's actions, allowing a simulation to run with fewer staff present
  - Sole developer for AutoSim, managing the project from requirements to delivery
  - Implemented automatic climbing & descending of flights towards their target altitude
  - Implemented automatic deconfliction of flights where loss of separation is predicted
  - Implemented automatic handling of jurisdiction (passing of flights between neighbouring sectors of airspace)
  - Implemented an automatic stack management system for Heathrow, allowing a simulation to run with a single controller, down from seven
- Ad-hoc projects
  - Created a plug-in for GeoMedia, allowing the program to analyse radar data
  - Created an "asset library," providing a single code base for future components to use
  - Implemented a common TCP, UDP and FMTP (flight message transfer protocol) connection library for components to use
  - Created a program that provides a live 3D visualisation of our simulated airspace using C++, OpenGL, written cross-platform for Windows and Solaris
- Received a Reward & Recognition prize for my contributions

Indie Game / App Developer

January 2011 - Present

- Senoka *(Windows Phone - 2011; Xbox 360 - 2012)*
  - First app I've released publically; a 2D puzzle game similar to Tetris
  - Includes 2D/3D animation and effects, and a touch-input gesture recogniser
  - Sophisticated artificial intelligence algorithms
  - Entered into Microsoft's Dream.Build.Play 2012 competition
- Nihongo *(Windows Phone, in progress)*
  - A Japanese language tutorial app, with touch-input character recognition
  - Still in development
- Renegade Firefighter *(Xbox 360, Windows 8, in progress)*
  - Second game to be released publically, still in development

Thorpe Park – Ride Operator

March 2005 - November 2007

- Ride operator for some of the largest rides in the park, including Nemesis Inferno and Detonator
- Often in charge of a team of up to twelve ride attendants – managing staff breaks, allocation of their roles, motivation, and management of any problems they may encounter
- Ensured safe operation of rides – monitoring staff, guests and the rides themselves
- Delivered throughput targets (riders per hour) to reduce queuing times
- Nominated "best operator of the year" by my team in 2006

Education

Royal Holloway, University of London, BSc Mathematics and Physics, first class honours

Sep 2005 – 2008

- Final year project based on machine vision – programming a computer to track objects through a video stream
  - Developed prototype programs using trial-and-error algorithms to determine accurate methods of determining objects within an image
  - Developed programs to analyse images for colour and shapes
  - Developed programs to analyse 3D space using cameras' locations, directions and projections from their 2D images
  - Developed programs to guess object positioning in a video based on previous frames
  - Presented project to university professors and peers
- Modules included: Calculus, Vector Analysis and Fluids, Ordinary Differential Equations & Fourier Analysis, Classical & Statistical Thermodynamics, Electromagnetism, Magnetohydrodynamics, Science Communication

Richmond-upon-Thames College

Sep 2003 – 2005

- A Levels: Mathematics A, Further Mathematics A, Physics A, Computing B (AS Level)

Whitton School

Sep 1998 - 2003

- GCSEs: 10 A-C including Mathematics A*, Art A*, Science AA, Graphic Products B

Skills

Computer programs	IDEs – Visual Studio, MonoDevelop, Sun Studio, Delphi Image editing programs – Paint.NET, Paint Shop Pro, Manga Studio Audio editing programs – Audacity, Wavosaur, Multitrack Studio Source control – Visual SourceSafe, TeamWare, TortoiseSVN MS Office 2003/2010 – Word, Excel, Outlook
Computer languages	C/C++, C#, VB, VB.Net, Delphi, Pascal, HTML (beginner), CSS (beginner), Java (beginner)
Programming APIs	Win32, MFC, WinForms, XNA, MonoGame, DirectX, OpenGL, GLScene, Fmod, Silverlight (beginner), WPF (beginner), WinRT (beginner)
Operating systems	Windows, Windows Phone, Xbox 360, Unix/Solaris, Linux (beginner)
Programming concepts	Cross-platform development, multithreading, asynchronous programming, networking, object-oriented programming, user interface, graphics & sound, XML & file IO
Languages	English (native), Japanese (beginner)

Interests & Activities

Groups	Windows Phone User Group
Activities	Learning the Japanese language Music – especially Japanese pop & rock Rope art – using rope to create artistic pictures and performances Dance Dance Revolution – I can beat most expert levels Restaurants – favourite cuisine being Korean General socialising – usually at a pub or park