

# Russell Gray

<http://uk.linkedin.com/in/russgray>  
@russgray | 07971 870089

## EDUCATION

### NOTTINGHAM TRENT

BSc(HONS) COMPUTER STUDIES  
2:1

## LINKS

Github:// [russgray](#)  
LinkedIn:// [russgray](#)  
Twitter:// [@russgray](#)  
Blog:// [BasildonCoder](#)

## PROJECTS

### TAGWAGER.COM

Allows users to annotate their bets with arbitrary tags, and run reports/statistics on those tags. Originally written to scratch my own itch, and to learn about the Google App Engine platform.

### BALANCEDNEWS.CO.UK

Toy project developed to prove that execution trumps ideas. A colleague kept talking about how a news aggregator that listed headlines left to right according to the source's place on the political spectrum would be a great idea, but never got round to doing it. So I did.

## SKILLS

### PROGRAMMING

Java • C# • Python • F# • Ruby  
Javascript • PHP

### PLATFORM

MySQL • SQL Server • Windows  
Linux • Nginx • Redis  
Google App Engine

### FRAMEWORKS

Spring • SimpleInjector • Dapper  
xUnit • Moq • MVC 4 • Flask • Rails

## EXPERIENCE

### LIVEDRIVE INTERNET | LEAD DEVELOPER

2012 - Present | Paddington, London

- Rewrote in-house custom FTP server to support FTPS protocol and expose high quality metrics and instrumentation.
- Used ETW/WPR to profile .Net application performance and identify bottlenecks caused by lock contention. Improved throughput per server from 800 reqs/seq to 90,000 reqs/seq under a homegrown stress-test harness (around 7,000 reqs/sec in real world usage, up from 500).
- Rolled-out statsd/graphite monitoring (C#, node.js) across much of the server infrastructure, improving insight into how the transfer software and storage systems are performing. Implemented high-throughput, low-contention instrumentation library (C#) for easily exposing rolling runtime snapshots of activity from servers under load.
- Introduced version-aware reference counting to uploaded files, to allow faster and more accurate identification of files that are candidates for deletion. Wrote a multithreaded deletion tool with adaptive clustering (the size of the cluster grows and shrinks around peak times so that it can run more aggressively during quiet periods) that safely reclaims storage at a rate of around 35 terabytes a day.
- Prototyped a horizontal sharding strategy for a large (9B rows) table that has two unique lookup keys (MySQL).
- Designed and implemented improved differential upload functionality based on both a strong hash and a rolling CRC in C#, an algorithm inspired by rsync.
- Introduced and oversaw an improved agile development process.

### BETFAIR | PRINCIPAL DEVELOPER

2006 - 2012 | Hammersmith, London

- Responsible for all customer account-related systems during a 3-year technical investment programme.
- Designed new account service (using Java J2SE, Spring, Jetty, Maven, JMS, Jenkins) to be the single source of truth for customer data across multiple jurisdictions and abiding by the requirements of multiple regulatory bodies. This included emitting asynchronous JMS messages over SonicMQ to notify listeners of key system events, such as new accounts or changes in account status.
- Wrote a DNS library in C# (supporting PTR and TXT records, which are absent from System.Net.Dns) to allow .Net applications to query Betfair's in-house service discovery system. Implemented by P/Invoking the Win32 API to access advanced DNS functionality.
- Modified Coco/R's C# 3.5 grammar file to produce a customised parser/lexer tailored specifically to help with a large-scale internal refactoring effort. Used them to write tools that generated 'happy path' integration test stubs for a legacy codebase, and identified unused web service operations by scanning Betfair's entire multi-language code repository.
- Wrote a client library for the public API using C# that utilised the beta release of the .Net 4.0 Task Parallel Library (TPL) to perform batched async operations, for instance retrieving all Premier League Match Odds markets in the most efficient manner.

## CAPABILITIES

### OPTIMISING

Experienced at system-wide profiling and optimisation, from database architecture to application issues such as threading, lock contention, CPU hotspots and OS interaction to get proven results in increasing throughput and reducing hardware requirements.

### REFACTORING

Expert at systematic improvement of legacy systems and introducing automated testing. Had a blog post on refactoring make it to the front page of slashdot.org

### ADAPTING

Comfortable with a number of functional languages, including F#, Ocaml, and Haskell; well-placed to capitalise on the increasing inclusion of functional techniques and patterns in mainstream languages

## INTERESTS

I am very interested in combat sports and actively train in both MMA and K1/kickboxing. I am a voracious reader and rarely found without my Kindle. I'm a half-decent cook and can barbecue a mean rack of ribs.

### BETFAIR | DEVELOPMENT LEAD

2006 | Hammersmith, London

- Line-managed a team of 6 developers and delivered a rewrite of Betfair's market management application (WinForms/C# client, Java J2SE Tomcat webservice). This project dramatically decreased the time elapsed when turning markets in-play, resulting in a revenue uplift of over £1M/year, reduced training costs, and reduced operator error.
- Implemented and maintained an open-source Python wrapper for the public SOAP API, which was adopted by a number of Betfair key accounts for writing high- turnover bots.
- Developed a bet-monitoring sidebar gadget in javascript/prototype that was on display at the official UK launch of Windows Vista. The gadget used AJAX and my REST API wrapper (see above) to perform regular background updates of the status of unmatched bets, and notified the user as bets became matched.

### BETFAIR | SOFTWARE DEVELOPER

2005 | Hammersmith, London

- Worked on and eventually lead development for Betfair's internal telephone betting application (WinForms/C# client, Java SOAP service). Delivered the application successfully in coordination with a major system redesign to meet regulatory requirements for Betfair's Australian licence.
- Helped the Telbet department to break their own records for calls answered, call duration, and bets placed during the 2006 Cheltenham Festival.
- Wrote unattended technical test for C# job applicants, which increased the quality of candidates making it through to the interview stage and saved many hours of time for interviewers.

### BRIDGMAN COMMUNICATIONS | SENIOR DEVELOPER

2000 - 2005 | Waltham Abbey, Essex

- Designed and implemented Pocket Arrest, a multithreaded mobile information management application written in C#, featuring asynchronous socket-based network sync and an on-board SQL Server CE database.
- Developed message protocol library shared by server and mobile application, supporting creation of text/binary hybrid messages specifically designed to minimise bandwidth and recover from failure, since communication was typically restricted to GPRS.

### PROTEK BOLDON JAMES | GRADUATE DEVELOPER

1999 - 2000 | Crewe, Cheshire

- Diagnosed and fixed bugs in a proprietary traffic-shaping network driver (C++).
- Implemented scheduling for a web-based provisioning and billing system (ASP, C++).

### SIEMENS GEC COMMUNICATION SYSTEMS | INTERNSHIP

1997 - 1998 | Beeston, Nottingham

### GEC MARCONI SENSORS | CONFIGURATION CONTROLLER

1996 (Summer Job) | Basildon, Essex

## AWARDS

2006 Winner Inaugural Betfair Engineering Innovation Award

## REFERENCES

Available on request