Rachel Bowyer

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Experienced functional programming enthusiast looking for my next challenge!

Droit – Senior Software Engineer   **Aug 2017 – Jan 2020**
Droit build systems to ensure compliance with financial regulation
Technologies: Clojure, ClojureScript, React/Reagent, Bootstrap, ANTLR, Postgres, Amazon AWS(EC2, RDS)
Worked on two main projects: Parsing and Annotator

Parsing
- Parsing was a project to automatically convert legal texts from simple XML or text (HTML, Word, PDF) into Akoma Ntoso (the de facto standard for legal XML markup)
- Designed an innovative approach combing a novel lexer (written in Clojure), the ANTLR parser and a framework (written in Clojure). The use of high-level languages/grammars and a framework minimised the effort needed to covert legal texts in new jurisdictions
- Led the development effort around Parsing and scaled it up to convert the entire body of Swiss Internal Law (around 6000 acts)

Annotator
- Designed and led the development of a single-page application, the Annotator, to view and annotate Akoma Ntoso documents
- The Annotator can be self-hosted by clients or deployed in the Cloud and supports full text search and document difference

Agents Mutual – Senior Software Engineer   **Jan 2016 – Aug 2017**
Agents Mutual is the company behind www.onthemarket.com
Languages: Clojure, ClojureScript. Technologies: Amazon AWS(EC2, DynamoDB, Kinesis), Redis, Postgres
Process: Scrum, Microservices, TDD, CI, Automated deployment to cloud
- Worked on the back-end data feeds and the estate agent facing website 'MyAM'
- Key project: replacement of monolithic feed system, which only supported batch data, with a new microservices based system 'databus' that could handle batch and real-time data
- Advocated and obtained support for a change in the "big bang" release strategy for 'databus', to a progressive rollout strategy running alongside existing code. This approach considerably reduced the risks and led to the successful delivery of the new system
- Re-engineered the sub-system for switching data providers (which was proving unreliable as it only guaranteed eventual consistency) to a new process that guaranteed strong consistency

MailOnline - Developer   **May 2015 – Dec 2015**
Worked on the front-end website www.dailymail.co.uk
Languages: Clojure, JavaScript. Technologies: CSS, ActiveMQ, Elasticsearch, Ring/Compojure, Riemann
- Led the development of a new feed to support Facebook's Instant Article platform – articles viewed from Facebook now render instantaneously

Goldman Sachs – Vice President (technical lead/systems builder)   **Feb 2011 – May 2015**
Technical aspects of my roles included design and code reviews plus hands-on development for reports, using two main architectures:
   A combination of Slang /SecDB/Scala and Sybase IQ. Slang is a GS proprietary scripting language similar to Ruby/Python and SecDB is a GS proprietary OO database
   A client server architecture with J2SE server processes caching data in-memory and a Java Swing client. Data is persisted to a Sybase ASE database
- Managed a team (3 direct reports) to develop liquidity risk reports for both internal use and for external regulators
- Worked with business users (Corporate Treasury) to understand and clarify user requirements. Successfully provided status updates to key stakeholders in Corporate Treasury and Technology

- August - December 2013 worked in the Bangalore office. Trained the newly established team
- Introduced Scala to our Slang/SecDB architecture, which allowed the use of 3rd party JVM libraries and provided a migration path away from our 20-year-old proprietary technology. This involved getting buy-in from stakeholders and creating presentations delivered to the global team on Scala

Writing Solutions – contract   Aug 2010 – Jan 2010
Writing Solutions provided written content for Fortune 500 and FTSE 100 companies
- Developed a Content Management System (CMS) in Ruby on Rails/AJAX

Lehman Brothers – Vice President   2003 – 2008
Worked in Credit Derivatives on the 'ICE' system, which provided risk numbers (overnight and some real-time), P+L numbers, curve marking and trading tools for traders, risk managers, and product controllers.
- The main technologies used were J2EE, Perl, TIBCO Rendezvous, Spring and Hibernate.
- Promoted from Senior Developer to Technical Lead 2005. Managed a team of 3 developers

Citigroup Global Markets – Vice President   1999 – 2003
Worked in Equity Derivatives/Convertible Bonds on EQRms, a Windows based equity risk management system, written in C++/MFC

KAI, RFS, NDS   1993 – 1999
Over this period, I worked as a developer for 3 companies: KAI Computer Services, NDS and Renault Financial Services. I used C++/MFC/ATL/ADO

Education

2009 – 2010   BPP Holborn, London
- Postgraduate Diploma in Legal Practice (LPC). *Distinction (78% average)*

2008 – 2009   City University, London
- Graduate Diploma in Law (CPE). *Commendation*

1990 – 1993   University of Bristol
- B.Sc. Hons in Mathematics. *Class 2.1*. "*Outstanding*" result in first-year exams

Selected additional learning (Massive Open Online Courses)

- **In progress**. MITx MicroMasters programme in Statistics and Data Science
- **April 2020.** Imperial College "*Mathematics for Machine Learning*" Specialization
- **Sept 2018.** UCSD & Higher School of Economics "*Data Structures and Algorithms*" Specialization
- **May 2015**. EPFL course "*Principles of Reactive Programming*"
- **Nov 2014**. EPFL course "*Functional Programming Principles in Scala*"

Professional Qualifications

- **December 2019**. Certified Scrum Master
- **October 2011**. Oracle Certified Master Java SE 6 Developer
- **July 2010**. Sun Certified Programmer for Java SE 6 (Mark: 96%)

Publications

- **March 2017.** Contributed Chapter 12, "*Vectors*", to the forthcoming book "*Clojure, The Essential Reference*" available as a MEAP from Manning https://www.manning.com/books/clojure-the-essential-reference

Open-source contributions

- **Jan - March 2017.** Wrote the Clojure microbenchmarking library, "Keirin" github.com/rachbowyer/keirin
- **March 2020.** Clojure implementation of Henderson Picture Language https://github.com/rachbowyer/henderson

Referees

Available on request.