DR. EVAN BROWN

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Current Position

September 2021 – present
Development Team Lead   Factris BV, Amsterdam, Netherlands
- I am responsible for managing a development team of 7 developers and 1 Quality Assurance tester.
- The team includes members responsible for frontend and backed software development of an online software platform for invoice factoring, credit management and financial reporting in the financial technology space.
- I take business requirements from a Product Owner, develop technical documentation from them and then break the requirements down into development tasks. These are then refined, prioritised and estimated in collaboration with the development team before being handed over for implementation.
- I approach software development and project management using iterations under the Agile approach with key elements of Scrum. Work is split into sprints with a collaborative planning session to start. Sprints last a fortnight each. A platform release will be made at the end of each sprint.
- I run retrospective and demonstration sprint ceremonies (often of prototypes) at the end of each sprint to drive continuous improvement, to address problems and to demonstrate progress to stakeholders in the business up to board level.
- I am responsible for reporting on current development activities and progress and negotiating the content of our future product roadmaps (based on business requirements) to and with the Product Owner and also to board level within the company.
- I run quarterly personal review and career development sessions with each member of the development team. These sessions involve providing and receiving performance feedback, setting personal development priorities for each member and identifying training needs as well as making remuneration adjustments. I report on these sessions and their outcomes to board level.

August 2019-present (concurrent position)
Honorary Research Fellow   University of St Andrews, Scotland
- I am responsible for supervising a number of student projects involving Natural Language Processing, corpus linguistics and data visualization.
- I help with teaching and marking within the School of Computing on a number of different Honours courses.

Employment History

December 2018 – September 2021
Senior Software Developer   Factris BV, Amsterdam, Netherlands
- I was responsible for designing and implementing the backend software platform for a financial technology company which specialises in invoice factoring.
- This work involved the creation of a bespoke API in Ruby on Rails which uses and conforms to the JSON::API standard. The frontend application was also developed in-house using React.
- The platform was documented through Swagger, deployed on Heroku and utilised GitHub and Atlassian JIRA for planning, coordination, code development, code management and versioning.
- The five-strong backend development team worked together from various remote locations.

October 2015 – December 2018
PhD Research Student   University of St Andrews
- I worked towards my PhD thesis in the School of Computing at the University of St Andrews.
- I proposed and created a prototype legal research tool for English law students called LARC. It integrates automated linguistic analysis and information visualisation based upon the content of legal case reports and legislation using customised open source software.

- The legal corpus that I created includes 400 million words of English case law and 290 million words of legislation. This was the first time that a collection of language of this size was prepared for English law.
- My work proposed new algorithms and user interface norms for language search and retrieval aimed at practising lawyers.
- It involved new data visualisation techniques for presenting precedent hierarchies from case law so that lawyers can overcome information overload and functional fragmentation problems.
- The software aimed to facilitate development of analytical and critical thinking skills which reverse the internationally-recognised problem of declining research capabilities in modern law graduates and lawyers.
- I successfully achieved my PhD degree after passing my Viva examination in April 2019.

September 2013 – October 2015
Software Developer and Technical Lead   Findmypast (DC Thomson), Dundee
- I was responsible for developing automatic image analysis and data redaction software for the online release of the 1939 National Register of Great Britain. This software was written in Python and Ruby on Rails.
- I worked closely with technical and management staff at The National Archives in Kew, the client for this project.
- The 1939 Register is similar to a census. It is composed of 1.2 million page images comprising 52.8 million individual records for the population of Great Britain.
- Records for people who were still alive had to be redacted automatically from page images before they could be offered for online sale and download to the public.
- I was also responsible for re-engineering, maintaining and supporting the internal transcription editing and correction software for this and all other Findmypast data collections.

June 2013 – September 2013   School of Geosciences, University of Edinburgh
Software development consultant
- I was employed on a temporary contract as a software development consultant building environmental models which look at the effects of climate change and different land use scenarios on a Scottish and European level.
- I provided software development capability in the R language and in Java for this project.

October 2011 – May 2013   Liverpool John Moores University
MSc Computing student (concurrent position)
- I studied for a Masters in Information Technology with a specialism in my last year in Human Computer Interaction and large-scale computer-based image analysis
- I graduated with a Distinction grade (an overall grade of higher than 80%).

May 2010 – May 2013   Knowledge Media Institute, The Open University
Software developer and IT consultant (concurrent position)
- I was responsible for the development of a software platform which implements Content Based Information Retrieval algorithms for the interrogation of picture collections through query-by-example.
- My software operated on a collection of millions of images and allowed users to search for relevant photographs by providing pictorial or photographic search queries.

August 2008 – March 2010   Cànan Ltd, University of the Highlands and Islands
Head of Research and Development
- I oversaw software development and service provision activities for large or novel projects.
- I submitted research papers to identified academic conferences which highlighted company activities.
- I provided intellectual property consultancy for key clients and internal training on rights management.
- I was responsible for the planning and design of information search and retrieval products.
- I was responsible for developing visualisation and novel user interface systems for a variety of projects.
- I provided technical project planning, management and development capabilities for key clients.

January 2005 – August 2008   Cànan Ltd, University of the Highlands and Islands
Research and Development Specialist

- I was Project Lead for the OpenOffice.org Scottish Gaelic localisation community. Responsible for producing and managing the localisation of two iterations of the OpenOffice.org productivity suite in Scottish Gaelic and providing quality assured executables of the software for Windows, Macintosh and Linux.
- I provided advanced software development skills in a variety of languages and platforms for the completion of software development and multimedia projects.
- I was responsible for developing the PhraseBox information mining and concordancing application for Learning and Teaching Scotland in association with Professor John McHardy Sinclair of Birmingham University.
- I was lead user interface developer for PhraseBox, incorporating visualisation technologies for collocation and concordance displays as well as advanced information mining features.
- I worked closely with Professor John Sinclair on the development of PhraseBox over a two year period. Also worked with researchers at the Faculty of Informatics, Masaryk University, Brno, Czech Republic.

August 2001 – January 2005   Cànan Ltd, University of the Highlands and Islands
Software Developer and Knowledge Transfer Programme Associate (concurrent position)

- I developed a template-based online language learning course for Scottish Gaelic, Irish Gaelic and Welsh.
- I developed applications and course modules for pronunciation practice and enhancement, involving sound similarity computation and result visualisation.
- I provided web and multimedia development capabilities for a variety of products and projects.
- I joined Cànan Ltd on a permanent basis after the successful completion of the Knowledge Transfer Programme with Edinburgh Napier University.

August 2001 – January 2003   Edinburgh Napier University, Edinburgh
Knowledge Transfer Associate and Member of Research Staff (concurrent position)

- I provided knowledge and programming skills to develop the BubbleSpeak online language learning system.
- I conducted research into sound similarity measurement, cross-language phonological analysis techniques and Bayesian network-based expert systems for skills assessment and learning problem diagnosis.

May 1997 – August 2001
Freelance web developer   Self employed, Inverness

- I specialised In small-scale e-commerce solutions for local businesses and sole traders, particularly in vinyl record and music sales.
- I started work in my year out after school and continued during holidays from my first University course.

Higher Education

April 2019   University of St Andrews
PhD in Computing Science and Human Computer Interaction

May 2013   Liverpool John Moores University
MSc Computing (with distinction)

2001   University of Durham
LLB Law (Hons)

Achievements

- **Appointed as an Honorary Research Fellow** in the School of Computing at the University of St Andrews after graduating with my PhD in computer science and Human Computer Interaction.
- **Graduated with distinction** from the MSc Computing programme at Liverpool John Moores University.

- **Development of several prototype iterations of visual search and retrieval tools** for the Knowledge Media Institute at the Open University. These releases were well received and I was asked to produce a fully-featured demonstration system which is based upon this work for exposure to end users within the staff and student bodies at the university.
- **Knowledge Transfer Programme** with Edinburgh Napier University and Cànan Ltd declared the best such programme in Scotland for that iteration in November 2004. Programme was further recognised as one of the top eight such ventures in the United Kingdom in the same year and an award was presented to all parties for this achievement at the Department of Trade and Industry in London.
- **Launched the PhraseBox information mining application** during a lecture by Professor John McHardy Sinclair at the American Association of Applied Linguistics (AAAL) conference in Montreal, June 2006. Provided technical support during the presentation to approximately one thousand delegates and assisted Professor Sinclair in developing his talk with reference to the PhraseBox application.
- **Won a number of awards** for creative writing, including *The Scotsman* newspaper's Best Poetry Award 1991; WH Smith Young Writers' Competition 1989, 1990, 1991, 1994; Welsh Arts Council Poetry Award 1992; Neil Gunn Writing Competition Runner-up 1997; Cadbury's Writing Competition Runner-Up 1989, 1990.
- **Poetry and short stories published** in a number of books and newspapers, including the *Inky Foot* series (Macmillan, various years); *The Scotsman* and *The West Highland Free Press.* Poetry has also been read on BBC Radio.
- **Managed and assisted in the production of OpenOffice.org in Scottish Gaelic** which remains (as part of the LibreOffice fork) the only large software package currently available and under development for this language.

Skills

- **Studied law to undergraduate degree level** and specialised in my final year on information technology law. This encompasses data protection, privacy and security, database rights, copyright and intellectual property.
- **Specialism in authoring feasibility studies, technology roadmaps and market briefings for key clients** across a variety of markets and areas of operation. I have wide experience of delivering for and to board level across a variety of technology sectors.
- **Managing software development teams and teams of transcribers** for the delivery of online software platforms and large-scale digitisation projects of public records including collections of newspaper articles, censuses and comparable population surveys.
- **Technical project management** and feasibility research. Well versed in market-led product development methodologies and software development management techniques, particularly Agile and Scrum. Have a successful track record in delivering large-scale software and web development projects for clients including Education Scotland, LearnDirect Scotland, the BBC, the Department of Trade and Industry and the Scottish Government.
- **Database design, development and replication** for large-scale data driven projects. Particularly skilled in PostgreSQL, MySQL and Percona variants to accommodate collections of millions of records.
- **User-centred design and technology development** capabilities have been central to many projects. These ensure that complex technical systems are presented to the target audience in a manner that they can accept, adopt and use productively. Work for my PhD with focus groups of lawyers, the Open University, Learning and Teaching Scotland particularly relevant here.
- **Programming and software development skills** at an advanced level across a range of platforms and technologies. Particularly strong in Ruby, Ruby On Rails, Python, Python with Django, Javascript, jQuery, PHP with the Laravel framework. Strong grasp of associated technologies including SQL, CSS, XML, JSON, CGI.
- **Implementing, customising and working with major text engines** and Natural Language Processing products including Apache Lucene, NoSketch Engine. Familiar with a broad range of corpus preparation tools and information augmentation software – lemmatisers, part of speech taggers, entity extraction systems, sentiment analysis techniques.
- **Applying the outcomes of academic and commercial research to software development** in domains such as similarity ranking, disambiguation of result sets and preservation of duplicates and essential duplicates.

- **UNIX/Linux server deployment, administration and maintenance** on a commercial high-availability basis for major clients and projects. I have managed and maintained both dedicated hardware and cloud systems on Heroku, Amazon Web Services and DigitalOcean. Extensive knowledge of parallel computing infrastructures using messaging protocols like AMQP through RabbitMQ. Also memory tuning, debugging and leak detection using Valgrind, gdb and native Linux tools.
- **Market research and opportunity identification** for client projects and new product development. Excellent background knowledge of current trends and activities in my areas of interest and an ability to quickly assimilate, understand and summarise knowledge from novel areas.
- **Written and oral communication and presentation skills** are a significant strength. Delivered presentations at academic conferences, seminars and commercial events. I am comfortable in developing work and presenting results and feasibility studies to board level. I have run sessions and presented at exhibitions including SETT, BETT and London Online.

Research Interests

- **Image analysis and transcription correction systems for large document collections** and particularly for more recent censuses and other public records where people reported may still be living.
- **Replacing and augmenting KeyWord In Context (KWIC)** textual information result sets with visual and other alternatives which can provide a greater degree of insight for the user of a search and retrieval system.
- **Image feature extraction and analysis** for the search and retrieval of images based upon the content of the image itself. Focusing on the identification of salient and robust 'features' in individual images which can then be matched to and measured against features from query images.
- **Aboutness classification** and the application of statistical Natural Language Processing techniques to the automatic determination of the topic of documents and text segments without recourse to subjective metadata.
- **The role and implications of probability-based scoring methods** in large-scale corpus investigation with text mining tools. Removing probability and chance from ranking algorithms by improving access to very large and balanced corpora.
- **Automatic disambiguation and summarisation techniques** using similarity (or difference) scoring and ranking methods with intelligent result filtration.

Publications

Brown, E. *Corpus Linguistics for the Exploration of Legal Precedent.* University of St Andrews, UK. Ph.D Thesis. (2019).

Brown, E. *Corpora and software tools for education and the law.* University of Saarland, Saarbrücken, Germany. (2017)

Brown, E., Murray-Rust, D., Cojocaru, G and Brown, C. *Uncertainty analysis of an Integrated Assessment Platform for European Climate Change.* Climatic Change. Springer Publishing, New York. (2014).

Little, S., Brown, E. and Rueger, S. *Book chapter on Content Based Image Retrieval and image feature extraction*. In *Interactive Information Seeking, Behaviour and Retrieval*. Facet Publishing: London. (July 2011).

Brown, E. *Software provision in minority languages: Can open source remove the limits of economic viability?* Proceedings of Rannsachadh na Gaidhlig. Sabhal Mòr Ostaig, Isle of Skye. (2006).

Henderson, J. and Brown, E. and Mitchell, C. *Adapting Open Source software for education: Challenges, methodologies and results*. Proceedings of the OUNL Open Source for Education in Europe Conference. Open University of the Netherlands, Heerlen. (2005).

Brown, E. *Template-based e-learning solutions for minority languages.* Proceedings of the International Symposium on English Language Teaching. Nan Kai Institute of Technology, Nan Kai, Taiwan. (2004).

Buchanan, W. and Brown, E. *Towards a reusable and re-configurable WWW: System level issues and approaches in software development.* Proceedings of IEEE 26th Annual International Computer Software and Applications Conference. Oxford. (2002).

Brown, E. and Buchanan, W. *Educational Modelling Language in the support of Minority Language Learning* (poster presentation with question and answer session). Learning and Teaching Support Network Conference Proceedings. Loughborough. (2002).

Newspaper Articles

Byfield, B. *OpenOffice.org, FOSS and the preservation of Gaelic*. Linux.com and widely syndicated online. Concerning the release of a version of OpenOffice.org in Scottish Gaelic, the first major software title to be made available in that language. (July 5th, 2005).

Partnership skills translate into a Gael Force. Edinburgh Evening News. Concerning the success of the KTP Partnership between Edinburgh Napier University and Cànan Ltd. (29th April 2004).

Conference Seminars

An Introduction to Copyright Law. Two plenary sessions and hand-outs from session presentation. Society for Screen Based Learning Conference, Bournemouth. (2003).

BubbleSpeak: A template-based, reusable teaching platform for minority languages. TCS Highland Seminar, Inverness. (2002).

Peer reviews

Peer review of various papers on Human Computer Interaction whilst completing my PhD at the University of St Andrews.

Peer review of various papers on information retrieval whilst working at the Open University.

Peer review of a proposed book chapter on copyright law for inclusion in an Open University compendium. Collection edited by Anne Jelfs. The Open University. (2004).

References

References available on request.