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Nationality: British
Date of birth: 27th December 1966

Professional Experience

Current and recent positions

2018-2019	<p>Senior Erlang Developer, Arweave</p> <p>“The” Arweave is a blockchain-like decentralised data structure designed around providing permanent data storage. A large part of my work involved scrutiny of the legacy codebase and its underlying business logic, as a basis for critique, documentation and improvement. My contributions include better economic modelling and forecasting, a priority queue for more rational TX propagation, read and write interfaces with IPFS (e.g. How to set up and run Arweave+IPFS nodes).</p>
2014-	<p>Chief Scientist, Dasudian / 大数点</p> <p>Dasudian is a startup based in Shenzhen, providing a range of software and hardware products for industrial Internet of Things. I developed initial implementations in Erlang and R, and provided guidance on Erlang and statistics. See for example rErlang, which runs an interactive R session from Erlang. In 2017 I was invited to speak at WTO (Shenzhen) and OECD (Bangkok) meetings.</p>
2013-2014	<p>Senior Erlang Developer, Mobivate</p> <p>SMPP gateway: I developed a reliable, high-throughput SMPP router in Erlang. This delivered marketing SMS messages in volume to Europe and Africa. Notable technical features included complex routing logic (on top of RabbitMQ), and runtime code generation for highly concurrent access to information.</p>
2011-2014	<p>Software Developer (Erlang, Python), Beatbullying</p> <p>Cosmo: This was a therapeutically-oriented social networking platform, designed in collaboration with the counselling staff at Beatbullying, and implemented by me in Python and Erlang. In 2014 it was running in eight countries across Europe. It was effective and highly regarded. Beatbullying presented a paper about this platform (which describes some of the Erlang tech, as well as the therapeutic function) at CHI 2012, entitled “We’re Altogether Better”. See also LIGA, an Erlang library for language identification, which I developed for this project.</p>
2003-	<p>Self-employed software consultant, Llaisdy</p>

I am a self-employed software consultant, specialising in graphs and networks (social and otherwise) and natural language processing. Below I list some recent projects. See also my open-source projects (mostly Erlang) on github: <https://github.com/llaisdy/>.

Corporate social networking (2015-2016)

For a company in south Cheshire (an alliance of GP practices), I developed a Django-based social networking platform based around knowledge-sharing and professional development. This is a small site with a user base of around 300.

Computing semantic similarity (2015)

For a UK medical startup, I ported a Java library that quantified semantic similarity between English sentences (based on WordNet) to Python.

Big March (2010)

This was a digital marketing campaign which involved a “virtual march” across the web. I was the main server-side developer (Python). The campaign won several prestigious international awards: [BeatBullying’s campaign The Big March collects awards](#).

Previous employment

2004-2010	Research Officer, Language Technologies Unit, Canolfan Bedwyr, University of Wales Bangor Developed infrastructure used to develop Welsh & Irish synthetic voices (WISPR); Maintained and improved Cysgliad (Welsh spelling & grammar checker, incorporated into MS Word); supervised an innovative machine translation project for subtitling (Testun KTP); managed project and implemented recogniser for desktop command-and-control application (Basic Speech Recognition 2008-9).
2002-2003	Project Leader, Speech Recognition Research and Development, Jura Technology Limited Successfully applied for, won and completed a DTI Smart project to assess the feasibility of developing a speech-enabled plug-in for Jura Technology’s categorisation and knowledge management software. The project focussed on automatic speech recognition and also involved some multimedia processing (i.e., mpeg).
2001-2002	Head of Topic Map Development, Jura Technology Limited Developed standards-compliant Topic Map processor as a middle-ware component of Jura’s automatic categorisation and knowledge management software. Participated in software development and strategic business planning. Represented Jura in international discussions, e.g. at the Organisation for the Advancement of Structured Information Standards (OASIS).
1994-1999	Teaching fellow, School of Psychology, University of Wales Bangor Organised and taught modules on practical phonetics, psycholinguistics and philosophy. Methods included web-based teaching and computer-assisted assessment. This work was instrumental in the School’s being awarded an <i>Excellent</i> in the 1996 Teaching Quality Assessment. Supervised final year experimental psychology projects: this involved designing and running experiments, and analysing data using SPSS. Organised the first School of Psychology mini-conference, and produced the conference proceedings. Involved in pastoral care of students and in School administration at all levels.

March-May 1996	Visiting fellow, Department of English Philology, Pomor State University Advised staff on course content; held seminars and tutorials on English phonetics and rhetoric.
1989-1994	Tutor (part-time), Department of Linguistics, University of Edinburgh Held tutorials on linguistics and phonetics; marked exams and term papers; acted as personal tutor; trained staff on the CHILDES child language database; was elected post-graduate representative.
1990-1993	Editorial assistant (part-time), <i>The encyclopaedia of language and linguistics</i> , Pergamon Press Ltd. Carried out editorial work including proof-reading and verification of bibliographies, enabling publication of the encyclopaedia by deadline.
1989-1990	Research associate, Centre for Speech Technology Research, University of Edinburgh Designed, compiled, managed and analysed a database of spoken British English, providing a valuable resource for researchers at CSTR; trained staff in spectrograph analysis.
June-Sept 1988	Research assistant, <i>Survey of the Gaelic dialects of Scotland</i> , Dublin Institute for Advanced Studies Assisted in the compilation of phonetic data from paper to electronic media for the Survey.

Publications

- 2019 *Block Chain Based Intelligent Industrial Network*. Automation, Control and Intelligent Systems, 7, 1.
- 2017 “The Internet of Value / 价值互联网” Invited talk at WTO Global Value Chain Innovation Development Summit. Shenzhen, China, 2017/10/13.
“Big Data and Bigger Pies” Invited talk at OECD Initiative for Policy Dialogue on Global Value Chains, Production Transformation and Development, 9th Plenary meeting. Bangkok, Thailand, 2017/11/16.
- 2009 *Developing speech recognition software for command-and-control applications*. Canolfan Bedwyr, University Bangor, final report for project *Basic Speech Recognition 2008-9*.
- 2008 Review of Dayley, B.: *SAMS Teach Yourself Django in 24 Hours*. *CVu*, 20, 3.
- 2007 Review of Chun, W. J.: *Core Python Programming*. *CVu*, 19, 5.
Review of Burke, D.: *Speech Processing for IP Networks: Media Resource Control Protocol*. *CVu*, 19, 4.
- 2006 *Tools and resources for speech synthesis arising from a Welsh TTS project*. Fifth Language Resources and Evaluation Conference (LREC), Genoa, Italy, 24-26 May 2006 (with Briony Williams & Rhys Jones).
Review of Martelli, Ravenscroft, Ascher (eds): *Python Cookbook, 2nd edn*. *CVu*, 18, 6.
Review of Rappin & Dunn: *wxPython in Action*. *CVu*, 18, 4.
Review of Lutz: *Python Pocket Reference, 3rd edn*. *CVu*, 18, 2.

- 2005 “SpeechCluster: A speech database builder’s multitool” Paper given at Lesser Used Languages & Computer Linguistics, European Academy Bozen/Bolzano, Italy, October 2005.
- Review of Robertson, J. & S. Robertson: *Requirements-Led Project Management*. *CVu* , 17, 2.
- Review of Gottesdiener, Ellen: *Requirements by Collaboration*. *CVu* , 17, 2.
- 2004 Review of Niemeyer, P., *et al.* : *Learning Java 2ed*. *CVu* , 16, 6.
- Review of Palmer, Grant: *Technical Java*. *CVu* , 16, 6.
- Review of Lutz, Ascher: *Learning Python, 2nd Ed*. *CVu* , 16, 5.
- Review of Powers, Shelley: *Practical RDF*. *CVu* , 16, 2.
- Review of Korf, I., *et al.* : *BLAST*. *CVu* , 16, 2.
- Review of Markel, S & D. Leon: *Sequence Analysis in a Nutshell*. *CVu* , 16, 2.
- 2003 Review of Mertz, D.: *Text Processing in Python*. *CVu* , 15, 6.
- 2000 *Engaging text: assessing paraphrase and understanding*. *Studies in Higher Education*, 25, 3.
- 1999 Review of Lightfoot, D.: *The development of language: acquisition, change and evolution*. *Journal of Child Language*, 26, 3.
- 1998 “Entertainment and education: a case study of a newsgroup as an on-line tutorial” Paper given at Computers in Psychology conference, University of York. .
- “ASI & IT questionnaires and students’ performance” Paper given at Computers in Psychology conference, University of York. (with Mike Beverley).
- “A positive rôle for OMR forms in assessment” Paper given at Computers in Psychology conference, University of York. (with Mike Beverley).
- “Some problems with the Developmental Lexical Principles Framework” Paper given at University of Sussex, School of Cognitive Science research seminar.
- “Vygotsky, quantification and lexical development” Paper given at University of Wales Bangor, School of English and Linguistics research seminar.
- 1997 “A formal analysis of dialogue and problem solving using a Vygotskian paradigm” Paper given at University of Wales Bangor School of Psychology Mini-Conference, University of Wales, Bangor.
- 1994 “Particularising the intranet: the activity of syncretism in the child” Paper given at University of Edinburgh Postgraduate Linguistics Conference.

Education

- 2005 Diploma in Statistics, Open University
- 1995 Ph.D. in Linguistics, *The development of the subject category in first language acquisition*, University of Edinburgh
- 1989 M.A. Linguistics with Artificial Intelligence, University of Edinburgh

Languages

Native	British English
Elementary	Russian, Welsh
Basic	Chinese (Mandarin)