

Curriculum Vitae

Personal Details

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Education

I have a PhD in Computer Science from the University of Southampton, for which I was under the supervision of Prof. David De Roure. My PhD spans the fields of Semantic Web, Social Networks, Virtual Research Environments (VREs) and Question Answering Systems. A summary of my PhD research can be found in the "PhD Research Summary" section of this CV. My PhD thesis itself can be downloaded from <http://eprints.soton.ac.uk/202435/>.

Before studying for my PhD, I received a first class MEng (Hons) degree in Computer Science also from the University of Southampton. Further detail of the work involved in my degree can be found in the "Undergraduate Degree Summary" section of this CV.

University: University of Southampton, 2001-2005 (MEng), 2005-2010 (PhD).

Secondary School: Rickmansworth School, 1994-2001.

Primary School: Harvey Road JMI School, 1988-1994.

Qualifications

PhD: In Computer Science from University of Southampton (2011)

Degree: 1st class MEng (Hons) in Computer Science (2005)

A-Levels: 4 - Maths, Further Maths, Computing and Chemistry.

GCSEs: 10 - Maths, English Language, English Literature, Science (Double Award), Geography, Information Systems, Religious Education, German and Latin.

Other Qualifications: Current clean Driving Licence
Merit level Young Enterprise Certificate
Phase 1 Instructors qualification for Tenpin Bowling

Past Employment

June 2009 - Present: University of Southampton, Highfield, Southampton. Full-time employment working on the JISC (a UK research council) funded NeuroHub project, collaborating with both computer scientists and neuroscientists at the University of Oxford and the

University of Reading, as well as Southampton. The goal of the NeuroHub project has been to develop a web-based online lab book system that allows neuroscientists to collate their research online in a way synonymous to a paper-based lab book. Then allowing them to benefit from the advantages of this system, such as being able to easily share their research securely with colleagues and access it wherever they are in the world and being able to quickly search over their and colleagues' research to save unnecessary repetition of experiments.

Over the course of this employment I have learned how to develop web-based applications in both Ruby-on-Rails and Drupal as well as Drupal modules themselves. I have also built extensively on my Unix programming skills.

**Periodically
October 2005 -
May 2009:**

University of Southampton, Highfield, Southampton. During the course of my PhD I have periodically worked on a number of UK research council funded projects, including myExperiment, PeerPigeon and CombeChem project website.

**July-September
2001-3:**

BAe Systems (EW Division), Capability Green, Luton. Three Placements in the Summers of 2001, 2002 and 2003, when they were at their Stanmore site.

**July-September
1999:**

Scotsbridge Mill Beefeater, Scots Hill, Rickmansworth, Herts. Worked as a kitchen porter.

Work Experience

July 2000:

Riverside Media Ltd., Kings Park Industrial Estate, Primrose Hill, Kings Langley. One week's work experience at a digital printers and graphic design company.

November 1998:

V.B. Johnson & Partners, 304 St. Albans Road, North Watford. One week's work experience at a quantity surveyors.

Interests

Tenpin Bowling:

As well as having an instructor's qualification, I also captained the University of Southampton's Tenpin Bowling Club. for three years. This involved captaining the club at national tournaments as well as chairing club committee meetings and attending university meetings. I still lead a team that designed and maintains the club website, which has an admin interfaces that allows users to enter scores, from which average and league tables can be generated. For this I received Athletic Union Club Colours in 2007. From the start of the 2007-08 academic year, this system has been adopted the BUSA (now BUCS) Tenpin Sports Management Group and is used by many tenpin bowling clubs from other universities.

**The Southampton
Open Wireless
Network (SOWN):**

Since 2007 I have been part of SOWN. This is predominantly a student-run project of the University of Southampton's Wireless Society and its Electronics and Computer Science department. Its main purpose has been to build a network which students can connect into through bespoke access points that they plug into there ADSL connections and then share these connections with other students, securely with appropriate access and usage restrictions.

As a part of SOWN, I have been involved in setting up network equipment, including developing firmware for the access points deployed on the project's network. I have also helped develop admin and monitoring systems for this network using the Kohana PHP framework and Icinga (a fork of Nagios) respectively. This has also given me the opportunity to investigate various networking standards such as IPv6, 802.1x, 802.11r, Radius and VoIP and work with applications such as OpenVPN, FreeRadius, OpenNMS and Traffic Control (TC). I have previously been responsible for processing requests for access points, organising deployments and monitoring access points once they were deployed, as well as more general organisational tasks such as compiling agendas for meetings and arranging social activities.

Cricket:

I am a supporter of Kent County Cricket Club I also play cricket recreationally.

Undergraduate Degree Summary

I learnt many different programming/scripting/markup languages during my undergraduate degree including, Java, C, C++, Visual Basic, Prolog, MATLAB, HTML, Javascript, Perl, PHP and MySQL.

During my degree I also studied a wide spectrum of topics including networking, databases, distributed computing, computer architecture, basic electronics, scripting, image processing and artificial intelligence (AI), in which the last I specialised in the most. For my third and fourth year projects, I investigated different AI algorithms.

For my third year project, I constructed a game similar to the board game Risk to develop an AI player that could evolve using a Reinforcement Learning algorithm. In my smaller fourth year project I investigated the use of Linkage Learning in Genetic algorithms, using MATLAB simulations to analyse the results obtained by earlier research papers.

Also as part of my degree I have completed several significant group projects, which required me to both work as part of a team and be able to manage other team members. During my degree I have studied several management units, allowing me to develop my management skills in addition to my computer science knowledge.

PhD Research Summary

My PhD thesis is entitled, "The Building and Application of a Semantic Platform for an e-Research Society" investigates technologies of the Semantic Web and Social Networks and considers their application to web-based Virtual Research Environments (VREs). In particular it considered the myExperiment project which was developed as a web-based VRE that allows scientists, in particular Bioinformaticians, to share their workflows (scripted automations of distributed services to analyse data) with colleagues through a social networking framework of friends and groups.

My thesis considered how Semantic Web technologies could be used to enhance myExperiment, in particular how the metadata that the system captured could be represented in a reusable way, notably with Resource Description Framework (RDF), so that it could be used by developers and users alike to get more out of the system. To achieve this I distilled myExperiment data model to aid the design of a modularised OWL ontology for myExperiment, which reused other well-known ontologies, such as Dublin Core, Friend-Of-A-Friend (FOAF) and Semantically-Interlinked Online Communities (SIOC) to provide a customisable schema that could not just represent myExperiment's data model but also other content management systems that use a similar social networking framework.

Then as part of my thesis, I built an application that could convert data in the MySQL database and from other sources into RDF compliant with the myExperiment ontology. This RDF was then regularly imported into a SPARQL endpoint customised for use by myExperiment users and developers. In addition to providing myExperiment's data in RDF, my thesis also considered how to make myExperiment a Linked Data compliant site and then led the myExperiment team in implementing these requirements, including content negotiation on the myExperiment site that did not adversely affect the current user experience and providing Linksets and a VoID specification for myExperiment to demonstrate it fully supports Linked Data.

My thesis then considered applications that could make use of a semantically-enabled myExperiment, including Research Objects which are an envisaged format for aggregating research with annotations so when users share their research (e.g. in a journal paper) they can be sure that the reader is provided with all the data and analysis, so they can reproduce, repurpose or reuse this research. My thesis also considered how the myExperiment ontology could be aligned with other ontologies to support tasks such as Scientific Discourse. It lastly considered how the Semantic data for myExperiment could be used to provide novel interfaces to myExperiment, in particular a Question-Answering system.

The abstract and a link to a PDF of my PhD thesis can be found at <http://eprints.soton.ac.uk/202435/>.