DAVE THORNE PhD

email davethorne@gmail.com
linked linkedin.com/in/thorne
where London, UK

more davethorne.co.uk

Curriculum Vitæ

current employment

I currently hold the position of Research Fellow in the Advanced Interfaces Group, School of Computer Science, the University of Manchester, UK. I have held a research position there since 2007.

summary

I am a software systems engineer and researcher working on a number of large interconnected systems in the scientific literature enrichment space. Most of my recent work has been either directly or indirectly related to the Utopia Documents application (http://utopiadocs.com), for which I am the lead architect. My responsibilities cover the design, implementation, and maintenance of most aspects of Utopia and its related systems, which necessitates work in a wide range of areas: server deployment and administration, UI/UX, network architectures and security, web and application development, data management and persistence, and data analytics.

My academic expertise pertains to how best to engineer software to be efficient, flexible, and reuseable. This lends me a particular focus on optimisation, high utility, and future-proofing of systems, and I take pride in injecting these ideals into the work I do.

We almost exclusively approach implementation in a collaborative and agile manner, both within the group when building inter-related components, and with our customers when ensuring we're providing them with what they need.

qualification

I was awarded my PhD in 2010 from the University of Manchester for research into how software can be architected without any knowledge of the semantic function expected of it, and thereby allowing for a far more fluid evolution of the software than is possible with traditional approaches. My thesis, entitled "*A semantic architecture for visualisation applications in the Life Sciences*," concentrated on applications to bioinformatics (e.g. three-dimensional protein structure, multiple sequence alignment).
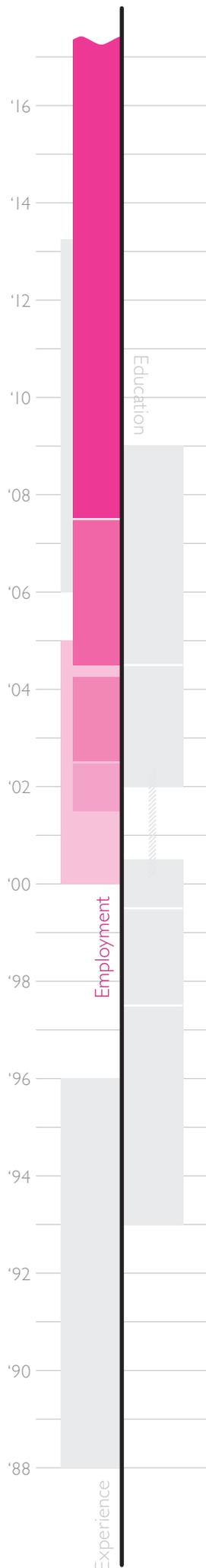
technical skills

The following lists the technical skills that have been most often or most recently employed in my work.

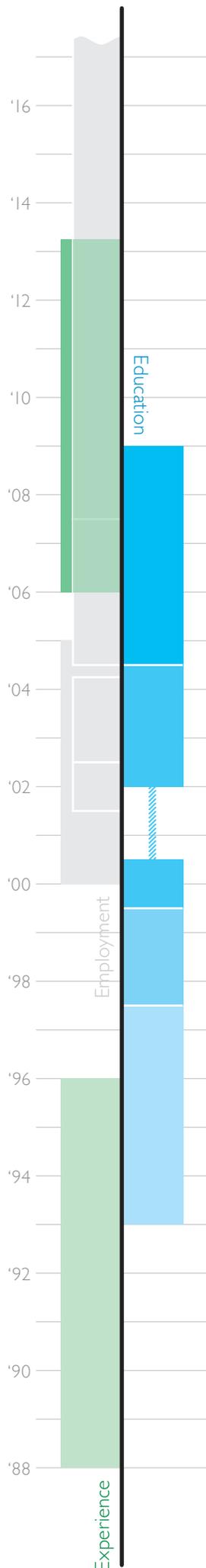|	
Languages	*Bash, C, C++, HTML5/CSS3, Java, JavaScript, JSON, PHP, Perl, PL/SQL, Python, XML*
Databases	*LDAP, MongoDB, MySQL, PostreSQL*
Frameworks	*AngularJS, asyncio, Boost, jQuery, OpenGL, pytest, Qt, SOAP, WSGI*
Networking	*Apache, eCAP/ICAP, HTTP, ReST, SoA, Squid, SSL*
OSs	*Linux, OS X, Windows (cross-platform development)*
Tools	*autotools, CMake, Git, lxc, Qt Creator, Scons, SVN, VirtualBox, Visual Studio*

personal interests

I am interested in: technology, science, SCUBA diving (I'm an officer of a London dive club), design, photography, board games. I am a: black belt in wado-ryu karate, first aider, trainee boat coxswain.

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Education

Employment

Experience

employment

Research Fellow — *2007 – present*
School of Computer Science, The University of Manchester, UK.
My most recent work relates to the research task of reading and understanding scientific articles, as well as aspects of library management and citation graphs. This work is embodied in the Utopia Documents application, and its various related databases and services. The *Lazarus* project is built on top of that work and incorporates named entity/ expression recognition and logical document reconstruction, allowing for the crowd-sourcing of knowledge from the structure, content, and interconnectedness of the scientific literature. I have been fortunate enough to have had creative input or control over most aspects of this work.

Teaching Assistant — *2004 – 2007*
School of Computer Science, The University of Manchester, UK.
In this role I provided assistance and marking services to undergraduate and postgraduate students during their labs and examples classes.

Lead Developer — *2002 – 2004*
Central Manchester City Learning Centre.
Here I worked on various development projects such as building an online sports centre scheduling tool, and an open source ticketing system for organising their I.T. helpdesk. I was also tasked with looking after the centre's linux servers, moving their authentication system to OpenLDAP and set up their first dual-boot computer suite to provide linux access to central Manchester's secondary schools.

Intranet Project Manager — *2001 – 2002*
ACN Europe B.V. (Amsterdam).
Having originally advocated the project, I was made responsible for designing and implementing a corporate Intranet at ACN that would provide company-wide process management and access to documentation by all employees. I was appointed Intranet Project Manager for this purpose, and liaised with members of all departments to ensure the system provided tangible benefits.

I.T. Support Technician — *summer 2001*
ACN Europe B.V. (Amsterdam).
This was a general hardware and software support role within the European office of ACN. I initiated the documentation of the work carried out by the support group, developing their first departmental service level agreement and measures for evaluating performance. While in this position I also wrote a web-based helpdesk management system (issue tracking and resource allocation) to streamline the group's function.

Freelance and short-term I.T. / Development — *2000 – 2005*
Throughout this time I worked on various small freelance jobs. Early in this period, before my year in the Netherlands, I focused on small web developments, including an online research questionnaire creation system for a number of research students, and the official website of the Grosvenor Halls of Residence. The Grosvenor website job acquainted me with the I.T. support staff of the (then) University of Manchester Institute of Science and Technology (UMIST), which led to my appointment as one of UMIST's *Ethernet Representatives*, mobile network administrators tasked with maintaining and supporting their halls' Internet connections. I also took a support role in a number of conferences held during this time. In the first half of 2001, during the initial year out of my undergraduate studies, I worked in the I.T. support call centre for Via.Networks, a Warrington-based ISP.

Education and Experience

Education

Employment

Experience

education

PhD Computer Science *2004 – 2008*
School of Computer Science, University of Manchester, UK.
"A semantic architecture for visualisation applications in the Life Sciences"
Research into approaches to extensible design, specifically looking at the role of semantics in the setting of software architecture for rich data visualisation applications. I was fortunate, as part of my doctoral training, to work on a number of European projects that required me to travel around Europe for various meetings, workshops and collaborations.

BSc (hons) Computer Science (first class) *1999 – 2004*
Dept. of Computer Science, Victoria University of Manchester, UK.
My second-year essay earned me a networking dinner invitation, and is still, at time of writing, being used as an exemplar for current students. My final-year project (entitled *Ambrosia: Interactive Visualisation of the Structure of Protein Fingerprints*) won the award for best third-year project. I took some time out of this course to gain work experience, during which I was given the opportunity to live and work in the Netherlands for a year. This opportunity I took, leading to a two-year industrial break in my studies.

STEP *1999*
Eccles College, Eccles, Salford, UK.
This additional qualification was suggested by my mathematics tutors and was taken alongside my final A-Level examinations.
— *Mathematics (Grade 1)*

A-Level *1997 – 1999*
Eccles College, Eccles, Salford, UK.
My final-year Computing project report was retained by the examining body (the AQA) for use as an exemplar of A-grade coursework.
— *Mathematics (A), Further Mathematics (A), Physics (A), Computing (A)*

GCSE *1992 – 1997*
Moorside High School, Swinton, Salford, UK.
Being chosen as Head Boy in my final year of secondary school provided me with my first experience of public speaking, both in front of my peers and in front of strangers.
— *Mathematics (A*), Sciences (AAA), English Literature / Language (AA)*

experience

Outreach *2006 – 2013*
Beginning during my doctoral studies, and ending when I relocated to London, I took part in and helped organise—often unpaid—numerous outreach and 'schools liaison' activities. These included: writing and giving talks at Computer Science open days and events such as the Animation10 Awards Festival; visiting local school careers fairs; manning the 2010 National Science & Engineering Week event stall; organising and executing workshops for various audiences such as an *Introduction to Java* workshop for Gifted and Talented secondary school pupils, a season of *Introduction to Linux* workshops aimed at secondary school pupils and sixth-form students (and their teachers and tutors), and various *Introduction to Programming* workshops throughout this period.

Youth *(8 years old) 1989*
For the sake of completeness, my first software development experience should be included. My vocation began, aged eight, when my brother and I were given an AMSTRAD CPC464 for Christmas. While my brother spent his alotted time playing games, I read the included BASIC manual and learned how to program. A couple of years later I inherited a BBC Micro, with its BASIC and assembly language, and before its demise it had been home to (albeit simple) implementations of a record-based database management system, a two-dimensional drawing program and a three-dimensional wireframe renderer.