Curriculum Vitae
Dr. Ashley McClenaghan

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At a Glance

I am interested in engineering new data technologies - graph databases, distributed ledgers, LLMs, etc. - into software stacks to deliver new features/opportunities. I have over 25 years of computing science experience in both industry and academia. My employers have included Morgan Stanley, JP Morgan Chase, HSBC, Philips Research and HP Labs. I have a Ph.D. and a B.Sc. in computing science.

Work Experience

Dec 2023 - present: Lecturer in Software Engineering at University of Stirling.
I'm the Programme Director of the university's Financial Technology (Fintech) MSc which includes teaching blockchain smart contract and mobile app development. Recent research projects have included: helping the start-up Econome AI to provide real-time analysis of web pages; working with the international ADAPT team to engineer LLM-based semantic search functionality for Sweden's Welfare Guide website.

Feb 2020 - Nov 2023: Postdoctoral Research Fellow at University of Stirling.
Project #1: Data Commons Scotland (EPSRC funded, finished May 2022) - making Open Data systems more useful to non-experts. I was focussed supporting civil society initiatives (leading workshop sessions), and in developing prototypes to show-case our findings (web tech, SPARQL/RDF).
Project #2: The Pathway Generator - using AI to recommend treatment combinations in Vocational Rehabilitation. In collaboration with Icelandic and Swedish partners, I've been building experiments and demonstrators using ML libraries and Large Language Models.

Jan 2018 - Jan 2020: Systems & Integrations Developer at University of Stirling.
Technical lead on projects that have delivered solutions for integrating the university's core systems (primarily SITS) with its new cloud-based service providers (INTO Global & InPlace). Technology highlights: Spring Boot, Swagger and Kubernetes.

May 2013 - Dec 2017: Senior Software Developer at HSBC, Stirling.
I was the API & security specialist in a team that developed a Foreign Exchange trade lifecycle back-end, using the LISP based Clojure language and a non-relational database technology called Datomic. The system is live, holds over 4 million live trades, and handles 50,000 new trades per day. I was focussed on developing the platform's resilient HTTP interface, on integrating it with the bank's Kerberos based authentication infrastructure, designing its XACML based authorisation subsystem, and with implementing its various data transformers and feeds.

Jan 2012 - May 2013: Senior Software Developer at Barclays Wealth, Glasgow.
I was the server-side lead in a small team of cross business developers who developed and maintained a collection of Java programs that transport and map data between various systems within the bank. For the last 5 months I was drafted into a team that was re-platforming a customer service request system. My tasks were to update the system's Java components and to migrate the system to use the bank's single sign-on security solution.

Sept 2011 - Nov 2011: Senior Developer at Acrede, Glasgow.
Leading a small team of developers in building a cloud based payroll system using a Grails/Java stack.

Jan 2009 - Aug 2011: Java Technical Lead at Morgan Stanley, Glasgow.
I was a technical lead in a software development team in the bank's Legal & Compliance division. Our team developed and maintained web-based, electronic form capture applications. My main contribution was to have introduced into the team, 'modern' technologies such as Groovy, Spring and Hibernate - previously they had been using Struts and homegrown frameworks.

Apr 2003 - Dec 2008: Systems Analyst at Stirling Council, Stirling.
I was the technical lead for the roll out a corporate-wide Electronic Document and Records Management System based around OpenText/Hummingbird's R-KYV product. This included advising on the technical choices during the tender/procurement phase through to helping to customise workflows and integrate legacy systems. Also, I was the council's lead during its participation in the Modernising Government/Scottish Citizen initiative: working with a variety of integration technologies. Additionally, I maintained (upgraded, integrated, backed-up) the council's Academy based Council Tax and Benefits systems.

May 2000 - Dec 2002: Systems Analyst at JPMorgan, London & Glasgow.
I was in a team that developed a bond order capture application called SynDirect. One of the highlights of this project was our development of a wireless interface (XML/XSL transcoding for WAP phones in Europe and Palm VIIs in the US) - to make SynDirect the world's first 'mobile bond platform'.

Sept 1998 - Apr 2000: Middleware Architecture at Chase Manhattan Bank, London.
I worked in the Middleware Architecture team on the ChaseXDK which supported an FpML compliant messaging model with bindings to 4 languages on 5 platforms.

Nov 1994 - Aug 1998: Distributed Systems Research Engineer at ANSA (APM Ltd.) & Citrix Systems Inc., Cambridge, UK.
I helped one client, Dresdner Kleinwort Benson bank, secure its Iona's Orbix implementation. For another, DERA/MoD, we developed mobile security policies for distributed computing within the armed forces. My research work included one of the first ever implementations of CORBA 2.0 IIOP in Java and investigations into mobile agent technologies (Telescript, Safe-Tcl/Tk).

Feb - Nov 1994: Research Scientist at Philips Research Labs., Redhill, UK.
Working in the interactive TV/set-top box research and prototyping team, I pushed the team towards the (then new) concept of downloadable apps. My idea was to move beyond straight-laced Ceefax browsing, towards supporting user interactions with vote-ins and game shows.

Sept 1992 - Dec 1993: Research Assistant at University of Stirling, Scotland.
On this SERC funded project, I developed a software tool for capturing requirements in a tractable way. This role also included tutorial/practicals teaching and assignment marking for various computer science courses at undergraduate and M.Sc. levels.

Education

- **1993 Ph.D.** "Formal Methods & Distributed Computing Systems" University of Stirling, Scotland.
- **1989 B.Sc. 1st Hons.** Computing Science. University of Stirling, Scotland.
- **1985 3 GCE A-levels**. Down High Grammar School, Downpatrick, Northern Ireland.
- **1983 9 GCE 0-levels**. Down High Grammar School, Downpatrick, Northern Ireland.

Awards and Selected Publications

- **2022** Conference paper: "Open is not enough: design considerations for a networked data commons". 13th Int. Conf. on Networked Learning, Sundsvall Sweden.
- **1995** Scientific paper: "A Web of Distributed Objects". WWW4 Conference., Boston.
- **1994** Scientific paper: "Visual animation of LOTOS using SOLVE". Formal Description Techniques VII, Amsterdam. North-Holland.
- **1991** Scientific paper: "Mapping Time-Extended LOTOS To Standard LOTOS. Forth International Conference on: Formal Description Techniques, Sydney, Australia. Elsevier Science Publishers B.V.
- **1989** Ph.D. sponsorship by Hewlett-Packard Labs Bristol.
- **1985** I received Addison-Wesley Book Prize for highest Computing Science grades in the department and offered a Carnegie Ph.D. Scholarship.
- **1984** Final year B.Sc. sponsorship by British Telecom Labs., Martlesham.