

Dominic Widdows

Contacts and Basic Information

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Work History

LivePerson Inc. Senior Principal Research Scientist. 2020-present

Work on dialog systems, natural language understanding, named entity recognition.

Led the internationalization program from English to 7 more languages.

Lead for system and software design, paper writing, implementation (Python, Kotlin).

Grab Inc. Head of Engineering (GrabShare), Head of Ads Data Science. 2016-2020

US Office founder, from 2 to 200 employees. Led interview policy and training.

Led Data Enrichment and Ads Data Science team working on search, advertising, promotions.

NLP for Southeast Asia (Python, Java). Translation, search, including patent applications and papers.

Created GrabShare. Researched, designed, built (Go) and launched ridesharing service in 5 countries.

Microsoft Bing. Senior Software Engineer. 2012-2015

Software engineering (C#, Cosmos/Scope), project leadership, research and design.

Bing Local Search content. Built and deployed distributed systems for web information extraction and local entity record linkage throughout many countries.

Google Pittsburgh. Software Engineer. 2007-2011

Software engineering (C++, Java, Python, MapReduce), research, design and leadership roles.

Wrote first routing engine for Google Shopping Express. Designed international schema, built merchant feedback tools, and web information extraction systems (patented) for Google Product Search.

Part of team that created Google Sky Map, augmented reality app for Android, 50 million+ installs.

MAYA Design. Senior Research Engineer. 2004-2007

Research engineering (Python, Java, Php), consultancy and project management at human-centered design firm. Projects included large deployments with businesses, government, universities, and the military.

Released open-source SemanticVectors software.

Stanford University. Senior Researcher, NLP. 2001-2004

Research engineering (C, Perl, Java), project management, graduate teaching, supervising interns.

Wrote many successful papers, Geometry and Meaning (book), and released open source Infomap project.

Education

Oxford University. DPhil in Differential Geometry. Quaternion Algebraic Geometry. 1996-2000

Thesis and journal papers on quaternionic tensor products and complexes. Full college and UK scholarships.

Durham University. BA in Mathematics, First Class (US equivalent 4.0 GPA). 1993-1996

Software Engineering Skills

End-to-end software cycle including design, prototype, production, testing, package deployment, UI, monitoring, team management. Domain-specific expertise in NLP, information retrieval, information extraction, machine learning, e-commerce, geo / local (and celestial - see below!)

Main Programming Languages: C++, Java, C#, Python, Go.

Other Familiar Languages: C, Perl, Kotlin, Javascript, Php, Bash, XML/HTML, SQL, LaTeX.

Computing Buzzwords: Linux, Windows, MacOS, Android, AWS, Docker, Kubernetes, MapReduce, Cosmos, Hadoop, HBase, Presto, Impala, Parquet, Keras, TensorFlow, GNU Make, MSBuild, Ant, Maven, Pandas, Sklearn, Spark, SpaCy, BERT, FastText, etc.

Sample Domains of Expertise

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|---------------------------|--|
| Mathematics and Computing | Expert knowledge of many aspects. Years of contributions and leadership. |
| Physics | Expert knowledge of quantum theory, logic, and related informatics. |
| Commerce | Product codes (EAN, UPC, ISBN), redesigned Google product spec. |
| Local / Geo | Ridehailing, traffic, information extraction, record linkage. Routing and delivery. |
| Human Centered Design | Design Sessions, User Modeling, Personas, Rapid Prototypes. Read, triaged, and acted upon thousands of user feedback messages. |
| Languages | English (songwriter). French, Spanish, Indonesian (intermediate). Italian, German, Thai, Vietnamese, Tagalog, Chinese, Portuguese, Japanese, Greek, Malaysian (very basic communication, solid NLP support). |
| Biomedical | UMLS, MedLine, SemRep, ontology learning. |
| History, Music, Botany | Given various talks and classes. |

Public Scientific Contributions

Papers and Conferences (<http://www.puttypeg.net/papers/>)

Over 50 refereed journal and conference papers in computational linguistics / NLP, ridesharing, mathematics, information extraction, bioinformatics, distributed systems, artificial intelligence, quantum computing.

Invited talks at ICTIR conference, DisCO ACL workshop, physics and logic, Quantum NLP.

Long-time conference organizer and steering committee member for Quantum Interaction.

SemanticVectors (<https://github.com/semanticvectors/>)

Lead developer, responsible for design, coding, integrating and testing diverse contributions, distribution, user support for open source word vector modelling package (before they were called word embeddings!)

See also <https://github.com/dwiddows> for projects including map rendering and electronic publishing.

Google Sky Map (<http://www.google.com/mobile/skymap/>)

Mobile sensor-based planetarium app for Android smartphones. Over 30M downloads. Now Open Source.

First “augmented reality” astronomy app, similar apps now available on all major mobile platforms.

Part of team of 6 volunteers, contributed to geometric transformations, star data, time travel, search.