

Dominic Widdows

Contacts and Basic Information

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Work History

Grab Inc. Head of Engineering (Data Enrichment), Head of Ads Data Science. 2016-present

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

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

Lead large-scale Python development including AI, ML, codebase design, testing, deployment.

NLP for Southeast Asia (Python, Java). Translation, search, sentiment, including patents-in-progress.

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

Learned intermediate Indonesian and beginner Vietnamese, Thai, and Tagalog to be more effective.

Microsoft Bing. Senior Software Engineer. 2012-2013, 2014-2015

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.

Serendipity Analytics. Director of Language Engineering. 2013

Designed, implemented (C++, Java, Hadoop), and integrated features for natural language interface to databases for cloud-based business intelligence product. (Startup ran out of money; subsidiary of GCE.)

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, early 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, Javascript, Php, Bash, XML/HTML, Scope/SQL, LaTeX.

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

Sample Domains of Expertise

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, Greek (basic, NLP).

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, biomedical informatics, distributed systems, artificial intelligence, quantum logic.

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!)

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.