David J. Wilson, PhD

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Education	**Ph.D.**, Computer Science. University of Bath (UK).	**Sept '11–July '14**

- PhD Thesis: *Advances in Cylindrical Algebraic Decomposition*
- Advisors: Professor James H. Davenport and Dr Russel J. Bradford

M.S., Pure Mathematics. Rutgers, State University of New Jersey (USA).   **Sept '09–June '11**

- Masters' Thesis: *On K. F. Roth's 'On Certain Sets of Integers'*

MMath, Mathematics (*Double First Hons.*). University of Oxford (UK).   **Sept '05–June '09**

- Undergraduate Dissertation: *Amalgams and the Coset Graph*

Technical Skills (*high comp.)

Languages: Ruby*, Python 2/3*, Maple*, HTML5/CSS3, JavaScript, Matlab, R, C, Coq
Frameworks: Ruby on Rails*, jQuery
Databases: MySQL*, ElasticSearch, MongoDB
Other: Git/GitHub*, JIRA*, SVN, VersionOne

Projects

GuideSpark Side-Projects (Private Code)   **Sept '14–Present**

- Video recommendation engine (decision trees for custom features) for internal hackathon.
- Statistical analysis to suggest categories to sell to accounts based on their video library.
- Analysis of viewer engagement and creation of video heat maps to derive optimal video length.
- Technologies used: Ruby on Rails, Python, MySQL, R.

Data Visualization (○ data-visualisation)   **Dec '14–Jan '15**

- Collection of d3.js wrappers.
- Top-Twenty creates flexible graphs for multiple data sets and numbers of entries.
- Word-Cloud creates graphs of words connected through shared phrases.
- Technology used: d3.js.

ROH Data (○ roh-data)   **Oct '14–Dec'14**

- Analysis of performance data from the Royal Opera House Collections.
- Includes web-scraper of the Collections website, analysis, and presentation.
- Technologies used: Python, d3.js.

CAD Assistant (○ CADassistant)   **Oct '13–June '15**

- Command line tool to help users utilize advances from PhD thesis.
- Presents the user with various questions regarding heuristics to chose best approach.
- Technology used: Python.

Professional Experience

GuideSpark, Inc., San Francisco, US.   **Sept '14–Present**
Data Engineer (formerly Software Engineer Intern).

- Full stack engineer for video-based web app,
- Promoted to Data Engineer position. Responsible for data tracking, integrity, and reporting.
- Gave company presentations about data collection and usage, and helped train new engineers.
- Conducted multiple independent projects (see above), presenting findings to Executive Staff. Results have since been used to drive sales, help increase customer satisfaction, are being integrated into the platform, and used to shape new content best practices.

Data Connection (now MetaSwitch Networks), London, UK.   **June '08–Aug '08**
Software Engineer Intern.

- Designed randomised stress-testing environment for VoIP client in C.

Training Courses

Data Analyst Nanodegree. Udacity.   **Jan '15–Present**

- Online project-driven course in data analyst skills including: wrangling data; exploratory data analysis; machine learning, data visualization; and A/B testing.
- 6 individual projects covering each of the skills.
- Technologies: Python, R, pandas, numpy, scipy, MongoDB, pyMongo, ggplot2, scikitlearn, d3.js.
- Asked to become a project reviewer and team guide.

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Publications and Research	- 16 peer-reviewed papers across 5 highly-regarded conferences and two journals in Symbolic Computation and Computer Algebra (www.davidjw.co.uk/researcher).
	- Given research presentations at 4 international conferences and 2 national conferences.
	- CICM 2014 Doctoral Programme Chair.
	- CICM 2015 (Calculemus) Program Committee.

Teaching Experience	**Lab Supervisor & Course Head Tutor**. University of Bath (UK).	**Sept '11–June '14**
	Teaching Assistant. Rutgers, State University of New Jersey (USA).	**Sept '10–June '11**

Notable Awards	**British Computer Society**. Distinguished Dissertation Award nomination *(pending)*.	**Nov '15**
	Engineering and Physical Sciences Research Council. UK ICT Pioneers finalist.	**Oct '14**
	Fulbright Commission. Fulbright Scholarship, Postgraduate Student Award.	**Sept '09**