Dr Paul Goodall

Data Science Leader

An engaged data scientist with over 15 years experience with big data and over a decade of leading data science and analytics teams. I am passionate about data-driven problem solving and the application of machine learning and big data to solve business and customer problems. I believe in true servant leadership and fostering a culture that attracts top technical professionals and allows them to innovate. I am continually excited about learning from the talented people I've had the pleasure of working with and I take pride in the professional development, growth and success of my teams and peers.

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Relevant Experience

2021 ▶ **Director: Data & AI** — ***Deloitte Australia***

Role: The Deloitte Consulting business has a large focus on Data and AI. As a senior technical leader I contributed to the internal strategy and business development, as well as growth and coaching of the technical consultant base. As a billable Consultant Director I provided subject matter expertise for Data Science and Analytics projects as well as general oversight and management of client engagements and relationships.

Team: Direct reports: 9 (5 Data Scientists, 2 Cloud Architects, 2 Data Analysts)
Indirect reports: Roughly 80 nationally (mixture of Data Scientists, Architects, Engineers, Analysts)

Highlights: Internal: I created and implemented a rigorous interview assessment framework to ensure that recruitment and growth of the best Data talent was consistent, fair and sustainable. This allowed the leaders and partners to make reliable quick-to-market decisions in a volatile recruitment market.

Client-facing: Helped a Reinsurance customer in APAC to prioritise and deliver a $1.5m data optimisation strategy. Improved the accuracy of cost-modelling for an Australian Insurance client, by developing a new set of predictive GeoSpatial data features.

2018-2021 ▶ **Principal Data Scientist & Acting Head of Data** — ***Telstra Purple***

Role: Telstra Purple is the recently-formed consulting arm of Telstra, with over 2,000 technical consultants from the combination of many professional services acquisitions. I was responsible for the growth of the Data practise, including business development, partnerships, and mentoring of 50+ data consultants nationally. Responsible for professional development of Data experts from Associate Consultant level up to Lead and Managing Consultant level, covering Data Architecture, Engineering, Data Analytics & Insights, Data Science and IoT. My role was client billable, providing hands-on coaching and leadership as well as technical project delivery assurance and managing the client relationships.

Team: Direct reports: 11 (6 Data Scientists, 4 Cloud Architects, 1 Design Consultant)
Indirect reports: 50+ nationally (Data Scientists, Designers, Architects, Engineers, Analysts)

Highlights: Large Australian FMCG Co: Used Video Analytics in conjunction with bespoke IoT to detect quality issues early in the production line and thereby reduce the annual $4.3m in waste product.

Major APAC Logistics Co: Delivered a major Data-Design project to make the business more data-driven across its entire operations. Solved numerous business challenges by identifying business processes that could be optimised using existing data and areas of the business where IoT could help to collect additional data to solve previously inaccessible problems. With accurate tracking of asset activities and utilisation through smart reporting, we were able to create a predictive maintenance model to reduce the annual $3.3m impact of unplanned maintenance on the business operations, thereby improving competitive tender pricing.

2014-2018 ▶ **Staff Data Scientist** — ***Commonwealth Bank of Australia***

Role: Grew a new Business Data Science team acting in an in-house consulting capacity from an ambition to improve business efficiency and productivity across the retail bank. Using the combination of Data Science and Operations Improvement techniques for our internal customers to realise cost savings, improved accuracy of decision making, and increased automation where possible.

Team: Direct reports: 7 (4 Data Scientists, 2 Data Analysts, 1 Data Engineer)

Highlights: Enterprise Credit Card Features: Engineered 25+ million credit card data features using CBA's *Omnia* big-data platform. These credit card data features were used to increase the predictive power across predictive risk models, to enable targeted customer marketing, and as the basis for many of the *Next Best Action* customer engagement strategy.

Home Loan Valuations: Created a model to incorporate various CBA data assets to optimise HL valuation estimates and thereby reduce the annual $50m spend on manually assessed valuations.

Automated Decisioning: Developed and enhanced CBA's *CommIncome* and *CommLiabilities* products, to enable rapid decisioning for Credit Cards, Home Loans, and Personal Loans applications.

Other Technical Experience

2011-2014 ▶ **Management Consultant in Operational Improvement** — ***Newton Europe Ltd***

Role: As an Operational Improvement Consultant, I specialised in FMCG and Healthcare. I managed several projects, each delivering £1m+ in productivity savings for my clients. I identified and implemented meaningful metrics/KPIs to steer business decisions via detailed business design assessments. Implemented accessible reporting with automated alerts, thereby supporting day-day decisions and improving operational efficiency.

2009-2012 ▶ **Post-doctoral Researcher in Astrophysics** — ***University of Oxford***

Role: Managed 3 parallel projects: (i) active Astrophysics research, (ii) deployed robotic telescopes across 5 continents with Global Jet Watch, (iii) developed an App enabling Science e-learning for schoolchildren.

Education

2006-2009 ▶ **PhD Astrophysics (Top 5%)** — ***University of Oxford***

Thesis: Interactions of the Microquasar SS 433 with the Milky Way Galaxy.

Context: The enigmatic black-hole object SS 433 has mystified scientists for decades. By incorporating several sub-disciplines in Astrophysics from Optical, Radio and X-ray astronomy as well as hydrodynamic simulations using a supercomputer, I was able to see the bigger picture and shed some light on the behaviour of this exotic phenomenon.

Learning: Developed strong analytical & problem-solving skills through 1:1 mentorship and regular feedback from many world-leading scientists. Learned numerous programming languages and new data analysis techniques to enable me to analyse Terabytes of data (real-world and simulated).

Technology: Used five world-class telescopes a cutting-edge 512-core supercomputer.

2002-2006 ▶ **Masters in Physics & Astrophysics (1^{st} Class, honours)** — ***University of Leeds***

Thesis: Searching for 'OMG particles' and sources of Ultra-High Energy Cosmic Radiation reaching Earth.

Context: Dual-honours masters degree in Physics with additional electives to specialise in Astrophysics. This Masters had a strong basis in laboratory work, including experiment design and reproducible results collection (very useful for future Data Science work). Large emphasis on advanced maths, statistics, theoretical physics, and real-world problem solving.

2014-2015 ▶ **Data Science Specialisation (passed)** — ***Coursera & Johns Hopkins University***

Topics: Reproducible Data Analysis, Regression Models, Statistical Inference, Practical Machine Learning, Developing Data Products

Publications

View PDF ▶ When Jets and Supernovae Collide: Hydrodynamically Simulating the SS 433-W50 System

Authors: Goodall, Alouani-Bibi & Blundell, 2011 (MNRAS)

View PDF ▶ Interactions of the Microquasar SS 433 with the Milky Way Galaxy

Authors: Goodall, 2010 (Oxford Bodleian Library)

View PDF ▶ Probing the history of SS 433's jet kinematics via Decade-resolution radio observations

Authors: Goodall, Bell Burnell & Blundell, 2010 (MNRAS)

View PDF ▶ Hydrodynamic Simulations of the SS 433-W50 Complex

Authors: Goodall, Alouani-Bibi & Blundell, 2008 (PoS)

Technical Skills

Coding Languages:
R, Python, Java, Perl, PHP, PDL, Fortran, C/++, SAS

Platforms & Cloud:
Various OS (Linux, MacOS, Win), Docker, Microsoft Azure, AWS

Big Data Systems:
Spark, Databricks, Snowflake, Hive, SQL (various flavours)

Data Visualisation:
R-shiny, Python-Dash, Microsoft PowerBI, Tableau, LaTeX, GLE