Consulting Statistician

Position Description, 3 February 2023, Ver. 1.3

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1   The basics

This is a **part-time** role - 4 days a week (subject to negotiation). We will discuss salary with the interviewees, but please be reminded it is a early-to-mid career role. Our office is in North Melbourne and we would like someone who can be based there (with hybrid working available).

2   About the job

We are looking for a consulting statistician to join our small, friendly and enthusiastic team. We are hoping to employ someone with a logical, scientific mindset, who is happy to apply their eye for detail to help us and our clients understand the patterns in their data. Given the nature of the role, you will need knowledge of a variety of techniques, to best advise on approaches, interpretations and caveats. You are certainly allowed (and expected) to have a preference and a flavour of approach, but the applications will be varied, and so an experienced eye is required to see a path forward in all situations.

Most days you will work on projects analysing data from environmental projects - e.g. bird and bat monitoring or pre-construction data from wind farms, or analysing the impact of fire on different habitats. You will also work on projects involving survey data analysis, including survey design and sampling, data quality audits, and weighting (particularly in the transport and planning field). Sometimes it will be more blue sky - helping to set up for a predictive machine learning model in a completely different field.

This role also involves consulting at early stages of projects, to implement appropriate data collection, sampling and analysis techniques, which will provide clients with solutions and insights.

This is a client facing role, for both internal and external clients. You will be supported and mentored by our senior statisticians and mathematicians. Also, you will be expected to work side-by-side with our junior analysts, as they support you in data cleaning and wrangling roles.

You will analyse data, write reports, present findings and actively participate in team and client

discussions. We are all expected to talk with confidence about our work and describe how and why we came to conclusions, and to seek out help when needed. You'll need to be organised and precise to manage work for multiple clients.

Our team has regular meetings and catch ups, and there's plenty of opportunity to both work alone and to discuss things with the rest of the team.

3 Your duties

You should expect to find yourself contributing to tasks like:

- Implementing approaches to collect and analyse data, accommodating statistical considerations, logistical constraints, human frailty, and real-world shenanigans.
- Exploratory data analysis in the **R** programming language, including discussing the results and next steps with other statisticians and team members.
- Discussing appropriate methods for cleansing and analysing data.
- Implementing novel statistical / mathematical techniques for unique problems.
- Communicating the results using reports in `rmarkdown` and `bookdown`.
- Synthesising and interpreting data, with the context of external information such as supporting documents, study designs, and personal communications with clients.
- Talking to clients and senior staff to resolve issues and communicate results of analysis.
- Specifying necessary data preparation and cleaning requirements with other team members.
- Recognising and debugging problems (code, statistical, and communication issues), and seeking assistance when needed.
- Working locally and on our servers.
- Keeping your work organised and up to date with our version control repositories using `git` and `svn`.
- Regularly communicating project status to other team members using Slack messages and Shortcut cards.
- Speaking up in meetings and report on success and failures alike.

4 Required experience and skills

Having the following experience would help you in the role. If you don't have this experience, we would want you to demonstrate how your experience would enable you to take on the above tasks in Section 3:

- Experience with data analysis and statistics in **R**.
- Tertiary training in statistics or mathematics.
- Theoretical knowledge of statistics (e.g. you'd be comfortable reading equations describing

how a generalised linear model is implemented).

- Clear technical communication skills (written and face to face) to synthesise the results of an analysis into ideas and recommendations.
- Meticulous attention to detail (especially good data management and statistical rigour).
- Demonstrated ability to attack and solve problems you've never seen before.
- Presented work at a conference or other similar level.
- Have a specialty, or flavour of analytic technique that you have both practical and theoretical expertise in (e.g. mixed modelling, deep neural networks, survey design etc.).

5   Helpful experience and skills

These are not *necessary*, but will be helpful for you on the job. If you don't have these skills, you'll pick them up on the job.

- Experience in analysing ecological data would be handy (you will work on a lot of environmental projects). You will also work on social research and transport projects so that would be helpful too.
- Experience in survey design, weighting, and analysis. In particular, we design and analyse multistage surveys and apply post-stratification via raking.
- Knowledge/experience of producing repeatable analysis using tools like `rmarkdown`.
- Experience reading and writing from databases (we mainly use PostgreSQL) and understanding of how to prepare relational data.
- Experience analysing and manipulating spatial data. We use the `sf` package in **R** as well as the PostGIS extension in PostgreSQL.
- Experience with the **R** `data.table` package. We don't use the `tidyverse` (we will provide training with `data.table` if needed, though).
- Experience using ABS Census data.
- Demonstrated ability to manage multiple projects and requests from multiple project managers.
- Demonstrated ability to manage your own time and deliver work in a timely manner.

6   Learning and development

This role is an early-to-mid level data science role, with a specialisation in statistics. We will support you to grow your skills while you are here. We expect:

- Regular catch-ups to discuss study and development opportunities and to share things you've done (e.g. we have fortnight 'show and tell' catch ups).
- There will be opportunities to develop your skills in mathematics, programming (especially in **R**), data management, consulting processes and/or project management, including

machine learning etc.

- We expect that everyone continues to develop their skills while working for us. If there is a particular statistical technique you wish to become proficient at (e.g. survival modelling, generalised linear mixed models etc.) there will be opportunity and support for this growth.
- You will provide reviews of other team members' work and receive (helpful) reviews of your own.
- We will give you guidance and feedback.

7 About working with us

- We are a small, friendly team based in North Melbourne (with flexibility to work in a hybrid way).
- You will have access to decent computing infrastructure without having to fill in 15 forms for access.
- Our team has been delivering in commercial Data Science for 17 years (consulting and software) and is more than happy to share their knowledge and skills openly with you. You will be an integral part of this team, and be involved in the full stack process.
- We are in between office dogs but we like pet-friendly people.