**ROLES APPLYING IN ORDER OF PREFERENCE**

1. **Data Analyst - DDI - Data, Insights, and Intelligence**
2. **Insights Analyst - LSE - Workplace Relations and Safety Policy**

Outline the reasons for being interested in each position.

Role 1:

I am an experienced data analyst with three years of experience in the New Zealand public sector and two years of experience in the New Zealand private sector. My background in Statistics allows me to identify and describe data trends, while my background in engineering gives me experience with specialised software to help organisations achieve business aims: Data Transformation and Modelling (R, SQL, SAS, and Python), Spatial Analysis (QGIS and ArcGIS), model deployment using cloud-based platforms (Snowflake and Databricks), and project’s version control (Azure Dev Ops, GitHub and Gitlab). In addition to this I am skilful Power BI dashboard creator, with DAX, Power Query, and relational models’ knowledge. I know how to identify the proper cardinality between tables, connect with SQL servers and retrieve information from the web. I am also Power BI certified by ACE a New Zealand Microsoft partner. I have engaged with different stakeholders across my public sector career. In Stats I engaged with the Department of Conservation DOC, LINZ, and NZ Post during census, and with the Ministry of Education MOE during my admin data research. In MBIE I have had engagements with Stats Nz National Accounts team during the creation of the new methodology for the MTAGDP model and the Stats Nz Statistical Infrastructure team for consults on the Beta Explorer during the implementation API pipelines for the Regional Economic Activity Tool. I am currently working in a regional trade model using GDP that will potentially require engagement with MFAT New Zealand Ministry of Foreign Affairs and Trade to see if there is appetite to extend it from regional trade to international trade.

Role 2:

I am a proved expert in complex surveys and time series with already a publication in MBIE on the MTAGDP model that sits under my ORCID <https://www.mbie.govt.nz/assets/2024-modelled-territorial-authority-gdp-methodology.pdf> . After implementing the previously proposed post-stratification methodology that used as a base Thomas Lumley’s analysis of complex survey samples, I proposed a change in the allocation using bi-proportional balancing (RAS) method that follows a standard matrix balancing methodology. I also changed how the time series were forecasted to hierarchical forecasting on industry divisions that is applied as a percentage on the allocated GDP of the previous year. My master’s in science in specific Statistics and having seen papers with Thomas Lumley at Auckland University makes me have first-hand knowledge on the complex surveys topic. In addition to this, I also hold publications on other quantitative methods like regressions and Markov random fields <https://www.mdpi.com/1996-1073/16/4/1929>. I am also a New Zealand Integrated Data Infrastructure (IDI) user, having been part of the Statistical Methods team in Stats Nz, where I did research on administrative data for the second iteration of the Administrative Population Census APC.

**ABOUT YOU**

Most recent position: Analyst

What were your key achievements in that role? 1. Evidence based analysis of topic modelling over Hort Tech for the Agritech ITP using Latent Dirichlet allocation LDA through text mining. 2. Statistical-econometric modelling of regional GDP to territorial authorities using income MTAGDP. 3. Hierarchical Forecasting of Time Series by Industry Divisions for MTAGDP 4. Updates and adding new modules on energy to the Regional Economic Activity Tool 5. Gravity Models for Regional Trade Estimates

What did you learn from this role? 1. Publication process for model releases and ministerial papers (engagement with digital channels and corporate communications). 2. How to communicate with different policy teams such as Kanoa. 3. What are the on-going MBIE modelling and analytics products

Previous position title (including organisation): Design Analyst - Response Management Team - Stats Nz

What were your key achievements in this role? 1. Evidence based analysis using classification models (cluster analysis) on Partial responses and No responses from residential dwellings in the 2023 Census to determine which ones had been impacted by the Cyclone Gabrielle which led to an increase in the response rate of 18% going from 70% to 88%. 2. Research on administrative data to substitute education information from census as part of the second iteration of the Administrative Population Census APC in order to move away from full enumeration surveys.

What did you learn from this role? 1. How to work across multi-disciplinary groups that involve multiple agencies (DOC, LINZ, NIWA). 2. How to use of different sources inside the IDI to do research on administrative data.3. How to design of pipelines for retrieving and transforming information from data providers in a structured way using APIs, in a way that removes dependency on manual processing, and facilitates replication.

**COMPETENCIES**

* Collaborates: We connect, working together to build partnerships with our communities, working collaboratively to meet shared objectives by gaining trust and support from others; actively seeking the views, experiences, and opinions of others and by working cooperatively with other across MBIE, the public sector and external stakeholders. At MBIE an example of when I collaborated with both internal and external stakeholders was while building a horticulture focused product for the Agritech Industry Transformation Plan ITP along with the Ministry of Primary Industries MPI and the Economic Development Transitions policy group EDT. The product consisted in dashboard with statistics and insights on Horticulture that showcased land use, technology applications (biofertilizers, waste management and traceability), national markets, business lifecycle stage, company size and customer owner. Using as a base example the ‘annual Australian Horticulture Statistics Handbook’ by the Department of Agriculture, Fisheries and Forestry DAFF and Hort Innovation Australia. I had periodic engagements meetings with MPI and EDT to discuss what KPIs the dashboard should contain, socialize the project iterations, and ask for SME feedback.
* Problem Solving/ Analysis: Uses rigorous logic and methods to solve difficult problems with effective solutions; probes all fruitful sources for answers; can see hidden problems; is excellent at honest analysis; looks beyond the obvious and doesn’t stop at first answer. Can apply strategical and critical thinking to analyse and identify issues and options. At MBIE an example of when I used problem solving or analysis to solve difficult problems was when I made use of both complex surveys and time series to propose a new methodology for the allocation of GDP to territorial authorities. The proposed methodology called RAS was based in econometric analysis and its main target was to replace the previous post-stratification methodology from 2018. The MTAGDP model extends Statistics New Zealand's Regional GDP series, an official Tier 1 statistic, to Territorial Authorities for better understanding of local economies and industries. The new proposed 2024 methodology was officially published and released under the MBIE Economic Development page. The change in methodology involved multiple steps: building the mathematical formulation of the model, implementing the model using MBIE's available tools in this case the chosen tool was R, comparing the results of the proposed methodology versus the previous methodology and writing down an academic paper to give stakeholders clarity around the model components. The model besides is the first post-COVID release after two years of standby, and it also addresses the lack of mathematical formulation and clarity the previous methodology had.
* Cultivates Innovation: We create new and better ways for the organisation to be successful by challenging the status quo generating new creative ideas and transforming them into workable solutions. At Stats New Zealand an example of when I cultivated Innovation was when as part of the Response Management team, I analysed and modelled non-identified temporal accommodations that were being misclassified as residential properties. In order to, target collection efforts and follow-up visits that could raise the response rate from 70% to as close to the 90% government target as possible. Most of those temporal accommodations were missed in the initial census design done by a different team called Census Transformation because they are handled by private digital platforms (bookabatch, etc) and were not contained in any governmental admin data source. My work consisted in finding classification methods, that would allow to identify clusters of misclassified dwellings based on response patterns and dwellings characteristics.
* DA – FTS – Design & Develop: Data Analyst – Functional Technical Skills – Design & Develop. Demonstrates a depth of subject matter expertise and a commitment to currency in subject best practice. You will be able to design and develop smart business solutions from complex data sources using the tools utilised by the Data Analytics team At MBIE an example of design & develop has been the design of an additional module on energy for the Regional Economic Activity Tool app and web tool. The Regional Economic Activity Tool is a comprehensive tool that comes both as an app and web page, with eight modules on different economic topics: Social & Income, Housing, Workforce, Education, Population, Economic, Agriculture and Tourism. Updates and additions to the tool must be done using R, SQL and yaml. Another example of functional technical skills it's that as part of the restructure and the migration towards snowflake, I have been attending multiple snowflake workshops such as the Snowflake Data Breakfast in Wellington that was hold in March. This workshop showcased multiple government use cases on snowflake particularly from the Institute of Environmental research ESR and Accident Compensation Corporation ACC, with the discussion panel being Jan Sheppard from ESR and David Gaffney from ACC. Another example of functional technical skills was when I worked in designing a process to incorporate APIs in the data consumption part of the Regional Economic Tool using R to facilitate data consumption, allow replication and reduce processing times.
* Decision Quality: We make quality and timely decisions that shape the future for our communities and keep the organisation moving forward by relying on an appropriate mix of analysis, wisdom, experience, and judgment to make valid and reliable decisions. Both at MBIE and Stats Nz many times I have had to pick up on-going projects that have had an impact on the community such as Census or the model for Territorial authorities MTAGDP (widely used by industries and councils) and implement significant changes to either change the methodology or direct the outputs towards a specific target in the case of the response rate. These projects represent a challenge due I wasn’t part of the original design team and implementing any type of change is usually something that is confronted by one or multiple parties, therefore implement changes in those projects were a test of my decision quality and my judgment. For the MTAGDP model implementing core changes in both the allocation methodology and the forecasting methodology challenged stakeholders and required a deep dive analysis as well as profound knowledge on the topic and the write down of a new methodology paper. For the census, doing quantitative analyses to improve the response rates and filling the gaps with admin data was also a testament on reliable decisions, especially after not being part of the design team three years prior and arriving to the project at the operational stage only to face on going challenges and resolve them with limited resources in both funding and access to external sources(anything that was not part of the original design was out of scope).
* IA\_WRSP - FTS – Experience: Insights Analyst (WRSP) – Functional Technical Skills – Experience. Demonstrates a depth of subject matter expertise and a commitment to currency in subject best practice. Applies appropriate analytical methodologies, frameworks, and methods of analysis to identify problems. At MBIE an example of functional technical skills involved selecting a methodology to measure regional trade. After a literature review on models for international trade, I decided to adapt such models called gravitational models as a function of the GDP and the distance between regions. Where distance accounts for the geographical and spatial aspect of the trade barriers. At Stats Nz an example of functional technical skills was using and adapting regression models to measure over-coverage in the administrative population census which can occur due to the difficulty of identifying the emigration or death of individuals, leading to population overestimate the administrative resident population.
* Planning: Accurately scopes out length and difficulty of tasks and projects; sets objectives and goals; breaks down work into the process steps; develops schedules and task/people assignments; anticipates and adjust for problems and roadblocks; measures performance against goals; evaluates results. At MBIE I had three months for structuring the methodology, results, publication, and engagement with stakeholders of the MTAGDP model. Before the project commenced, I decided to break down the work by five stages (data processing, modelling, forecast, nowcast of the last year and model visualisations for the release) so it could be partitioned into deliverables subject to deadlines. I anticipated the 2024 release and new methodology to be available by the end of May, taking into consideration the two weeks engagement that had to be done with Digital Channels and Corporate Communications for the respective publication. The new methodology and model freed one month of work for the whole team since the stated date for the release is June and it was finally released in May.

**ADDITIONAL INFORMATION**

**Role 1:** While working as a Risk Analyst in the Financial Sector I did multiple propensity models that classified the customers that were most likely to pay across different credit products using both a frequentist and Bayesian logistic regression approach.

**Role2:** As a Statistical Data Analyst working for Stats Nz. I did an over-coverage modelling for the Administrative Population Census using Bayesian trees and Stan with a hierarchical Logistic Regression model. The APC is part of Stats NZ’s census transformation programme, which explores the use of administrative data to produce census information.

**FURTHER COMMENTS**

* Salary annual review. I was supposed to go up one pay band from scale 13 to scale 14 by June. This was previously negotiated with my hiring manager Ashok but hasn't happened yet.