# Ministry of Social Development logo

## Senior Data Scientist

## Insights

## Our purpose

**Manaaki tangata, Manaaki whānau**

We help New Zealanders to be safe, strong and independent

## Our commitment to Māori

As a **Te Tiriti o Waitangi** partner we are committed to supporting and enabling Māori, whānau, hapū, Iwi and communities to realise their own potential and aspirations.

## Our strategic direction



## Our Values



## Working in the Public Service

Ka mahitahi mātou o te ratonga tūmatanui kia hei painga mō ngā tāngata o Aotearoa i āianei, ā, hei ngā rā ki tua hoki. He kawenga tino whaitake tā mātou hei tautoko i te Karauna i runga i āna hononga ki a ngāi Māori i raro i te Tiriti o Waitangi. Ka tautoko mātou i te kāwanatanga manapori. Ka whakakotahingia mātou e te wairua whakarato ki ō mātou hapori, ā, e arahina ana mātou e ngā mātāpono me ngā tikanga matua o te ratonga tūmatanui i roto i ā mātou mahi.

In the public service we work collectively to make a meaningful difference for New Zealanders now and in the future. We have an important role in supporting the Crown in its relationships with Māori under the Treaty of Waitangi.  We support democratic government. We are unified by a spirit of service to our communities and guided by the core principles and values of the public service in our work.

## The outcomes we want to achieve

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| --- | --- | --- |
| New Zealanders get the support they require | New Zealanders are resilient and live in inclusive and supportive communities | New Zealanders participate positively in society and reach their potential |

## We carry out a broad range of responsibilities and functions including

* Employment, income support and superannuation
* Community partnerships, programmes and campaigns
* Advocacy for seniors, disabled people and youth
* Public Housing assistance and emergency housing
* Resolving claims of abuse and neglect in state care
* Student allowances and loans

## **He whakataukī\***

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| --- | --- |
| Unuhia te rito o te harakeke  Kei hea te kōmako e kō?  Whakatairangitia, rere ki uta, rere ki tai;  Ui mai ki ahau,  He aha te mea nui o te ao?  Māku e kī atu,  He tangata, he tangata, he tangata\* | If you remove the central shoot of the flaxbush  Where will the bellbird find rest?  Will it fly inland, fly out to sea, or fly aimlessly;  If you were to ask me,  What is the most important thing in the world?  I will tell you,  It is people, it is people, it is people |

\* We would like to acknowledge Te Rūnanga Nui o Te Aupōuri Trust for their permission to use this whakataukī

## Position detail

### Overview of position

The purpose of the Senior Data Scientist position is to provide timely, innovative and practical data science solutions to complex analytical problems. The Senior Data Scientist is a specialist internal data consultant and influential trusted advisor who works closely with the business units within an allocated portfolio to understand their needs, challenges and opportunities. It effectively collates, analyses and presents data from a range of sources to inform service and system design processes and solutions ensuring these are fit for purpose.

As one of the technical specialists of the team, the position also provides an escalation point within the team, along with guidance and coaching of more inexperienced employees and other colleagues, sharing knowledge and building capability. The role actively keeps up to date with the latest developments within data analytics to ensure MSD uses the latest tools and methods within data analytics, incorporating these to existing processes within MSD and shares learnings with others.

The role is a data analytics champion who communicates the value of the solutions designed to senior management, Ministers and to employees on the front line.

### Location

National Office, Wellington

### Reports to

Manager Insights (Employment, Income & Housing, Community)

Manager Operational Products and Support

Manager Data Strategy and Design

## Key responsibilities

Innovation and Delivery

* Take a lead role in the end-to-end data science lifecycle, from data collection and cleaning, to building the products to support frontline decision-making at a case level
* Use innovative data science methods to analyse MSD’s client base and use multiple data sources to identify opportunities that better target services
* Use predictive modelling to improve the MSD’s range of services to clients, including regression models, A/B testing, client segmentation, recommendation systems
* Use the Model Development Lifecycle to build safe and effective operational models, in line with the Privacy Human Rights and Ethics (PHRaE) Framework and the Algorithm Charter and other regulations and frameworks as appropriate
* Confirm and test the suitability of proposed solutions with front line and business knowledge experts to ensure safe interpretation of the analysis provided to them
* Ensure that appropriate processes are in place to collect, document, and confirm new and changed requirements from the business in a structured manner
* Facilitate the execution of the work, ensuring it adhered to the Ministry processes and standards
* Translate complex data science principles effectively into a practical operational context
* Deliver data science products that meet customer need and organizational goals.

Data and Software Engineering

* Collaborate with data engineers in building pipelines for constructing appropriate data management systems for data science capabilities
* Apply software engineering principles to make the data science products operational and produce reproducible results
* Provide proactive advice around the development and implementation of data management systems to utilise sophisticated data science methods on a self-service basis
* Develop innovative uses of existing data to provide enriched variables that help turn data into high-value business information.

Leadership / Mentoring

* Coach other team members and help grow the data science capability, keeping both own and colleagues’ skills up to date
* Share subject matter expertise and provide effective and proactive training within the team and across other technical teams
* Understand and communicate industry developments and the role and impact of new technologies in the organisation
* Systems thinking and consider and understand links between own work, the teams over all work program and broader Strategy and Insights work program
* Contribute positively to the team environment to allow individual and team goals to be met
* Share responsibility for outputs, standards and improvements
* Represent MSD across government and at external forums
* Provide thought leadership for data science and analytics ensuring continuous improvement and delivery of products to make for a better customer experience
* Use a highly collaborative approach across MSD, and willing and able to challenge the status quo and provide tough advice where required.

Relationship Management

* Builds and maintains strong working relationships with relevant teams, senior managers and advisors across the Ministry
* Build and maintain effective working relationships with key external stakeholders
* Contributes to building the strong reputation of the Strategy and Insights group across the Ministry
* Proactively deliver timely advice and highly professional support in accordance with established Ministry frameworks across the organisation
* Identify common areas of interest emerging across stakeholders and proactively develop opportunities for collaboration
* Effectively communicate and work with employees within the business groups to deliver timely, innovative and practical data science solutions to complex analytical problems.

Advice and Support

* Data consultancy, working with business areas to incorporate the effective use of data into service and system design
* Build understanding of new methods by responding to enquiries from internal and external sources
* Understand the limitations of data held in MSD’s systems, provide advice on its reliability and reflection of operational practice
* Provide advice on the use of available data to address different business issues
* Present results to a range of internal and external stakeholders
* Provide support and mentoring for other team members to help develop their capability to use innovative methods and a highly practical setting
* Provide advice on the effective integration of evidence and practice
* Promote compliance with relevant legislation.

Communication

* Ensure appropriate, informative and relevant information and reporting is delivered to stakeholders
* Absorbs complex information and communicates effectively at all levels to both technical and non-technical audiences.
* Work to thoroughly understand the needs, challenges and opportunities of the business to help guide in data collection, analysis and application
* Act as the trusted advisor and point of contact for all data enquiries from the business, proactively engaging with key customers and providing solutions and suggestions
* Present complex and/or technical data in a simplified manner easily understood by the intended audiences
* Write clear reports that synthesize complex results and focus on the business value proposition from the findings of analysis and research
* Create stories from data using data visualisation and storytelling techniques and collaborate with the Information Designer to ensure best practices for visualising data.

Influence

* Influence organisation, customers, suppliers, partners and peers on the best practices in data and analytics
* Understand, promote and actively contribute to the implementation of the Data and Analytics strategy
* Build appropriate and effective business relationships
* Make decisions which impact the success of assigned work, i.e. results, deadlines and budget
* Have significant influence over the allocation and management of resources appropriate to given assignments
* Support and facilitate the use of data to support decision making to achieve the larger group or wider organisational objectives
* Understand how work is delivered and lead projects within the Scaled Agile framework
* Escalate and manage programme impediments and mitigate risk to help ensure value delivery is being met and obstacles are being cleared
* Support and guide changes to improve the way teams work within the programme.

## Embedding te ao Māori

* Embedding Te Ao Māori (te reo Māori, tikanga, kawa, Te Tiriti o Waitangi) into the way we do things at MSD.
* Building more experience, knowledge, skills and capabilities to confidently engage with whānau, hapū and iwi.

## Health, safety and security

* Understand and implement your Health, Safety and Security (HSS) accountabilities as outlined in the HSS Accountability Framework.
* Ensure you understand, follow and implement all Health, Safety and Security and wellbeing policies and procedures.

## Emergency management and business continuity

* Remain familiar with the relevant provisions of the Emergency Management and Business Continuity Plans that impact your business group/team.
* Participate in periodic training, reviews and tests of the established Business Continuity Plans and operating procedures.

## Know-how

* Relevant tertiary qualification (particularly, Computer Science, Maths, Physics, Statistics, or Operations Research) or equivalent experience
* Extensive experience using statistical and data science languages (SAS, Python, R, Julia, SQL) to be able to clean and manipulate data from different data sources and extract insights from large datasets. Other programming languages may be an advantage
* Demonstrated capability to effectively use a range of machine learning techniques such as propensity modelling, survival analysis, regression analysis, profiling, segmentation, association and network analysis to provide solutions across a range of real-world contexts
* Experience in software engineering and version control tools
* Familiarity with cloud platforms and demonstrated ability to productionise data science products in a cloud setting is highly desirable
* Experience in analysis of business and market data and public sector data
* Ability to use open source tools and datasets to produce innovative insights and data science products
* Knowledge of mining free text using natural language processing techniques and linking together a wide range of unstructured data to support models
* Extensive experience in data visualisation tools and ability to create stories from data
* Ability to translate information and analysis into outputs which are readily interpreted by highly operational areas and non-technical users
* Experience in investigating and analysing complex problems, and reaching sound conclusions
* Demonstrated ability to write to a high standard (clear, accurate, concise, appropriate to the audience).
* Experience coaching others
* Demonstrated experience in performing a trusted advisor role to senior and mid-level management and peers, in particular providing unbiased advice.

## Attributes

* Rigorous intellectual, analytical ability and able to think strategically
* Sound judgement and political sensitivity
* Passion to provide useful high-quality information to stakeholders in a way that is timely, meaningful and accessible for them
* Highly effective organisation skills, with the ability to prioritise in a busy and complex environment
* Achievement of results in a time pressured environment
* Adapt to the needs of the audience, able to positively influence others to accept ideas
* Highly effective communication (both written and oral) skills
* Leadership and mentoring ability
* Able to establish, build and maintain effective and appropriate relationships with key stakeholders
* Strong client focus
* Team player
* Welcome and value diversity and contributes to an inclusive working environment where differences are acknowledged and respected.

## Key relationships

Internal

* Evidence & Effectiveness team
* Data Strategy and Operational Products team
* Data Management and Information Delivery management and employees
* Strategy and Insights management and employees across all levels
* Other MSD employees as appropriate, including Operations staff

External

* Relevant Ministers and their employees
* Central agencies and other government organisations
* Non-government organisations and groups
* Researchers and universities

## Other

### Delegations

* Financial – No
* Human Resources – No

### Direct reports – No

### Security clearance – No

### Children’s worker – No

Limited ad hoc travel may be required

Holds current drivers licence and is prepared to drive MSD’s vehicles if required

**Position Description Updated:** July 2024