Data Infrastructure Engineer

Biological Heritage National Science Challenge

Eco-index Programme

Brief description of the role

The role is, primarily, to support the development of an Eco-index that will enable reporting on NZ's national investment in our biodiversity and the impacts of that investment. It will require working from scratch in the development of data pipelines from a range of public and private agencies to a platform that will enable data analysis. It is likely that agencies will operate using different data formats, consequently the capacity to transform and standardize data for analysis is crucial. The role will include scoping and sourcing data and awareness of third party privacy interests and data sovereignty concerns. External parties could include iwi, primary industries, banks, investors, accounting firms, regional/city councils, government agencies, environmental NGOs and urban conservation/restoration community groups. These data and the resulting data infrastructure are crucial to Eco-index co-design and a successful delivery of improved biodiversity outcomes for the nation.

As part of this role you will be required to participate in a weekly team hui and at times, interactions with others in the larger BioHeritage Science Challenge. This role requires desk work (emails, phone calls, computing) and reporting to the co-leaders Kiri Joy Wallace and John Reid. You will work closely with team member Jay Whitehead, an environmental indicator specialist.

It is intended that this role be a fixed-term position as University of Waikato employee (with the associated privileges attached to the institution), however it can be offered as a postdoc if desired. The role can be conducted remotely or a desk at the university will be provided if you so wish (and a blended approach to your working locations is possible). However, you must have excellent ability to work apart from your team members and communicate clearly with them remotely, as they are located throughout the country. The salary will be commensurate with experience and qualifications in the range of $70,000 - $80,000 NZD per annum.

Skills needed

Note: *the role is primarily to source data and create a database in a co-design process with external parties. Guidance and help will be provided for each of the requirements listed*

Technical abilities required to develop a multi-functional data reporting platform including:

- *Experience analysing and working with large data sets*
- *A good understanding of cloud technologies and Distributed Systems*
- *Ability to constantly improve, refactor, automate and avoid duplication*
- *Understand the different layers of testing and have experience in developing your code in a TDD fashion*
- *Programming and testing ability in multiple technology stacks*
- *Interoperability (even if you have to DIY from time to time).*
- *Experience with Cloud infrastructure technologies (GCP, Azure and AWS)*
- *GIS knowledge or willingness to learn*

General abilities preferred:

- **Creative thinking and an enjoyment of puzzle solving** as you will be part of a team creating a completely novel product that will at times feeling confusing and require self-direction and a strong team ethic.
- **The willingness to communicate with institutions/people** to discuss logistics of accessing their data for use in the Eco-index programme. Our relationship manager will handle all preliminary conversations but you will need communicate specific technical requirements with valued collaborators from time to time.
- **An awareness of data sovereignty issues** or willingness to develop a working knowledge of these and exercise social and cultural integrity when handling data.
- **People skills and ability to invest in relationships** within your Eco-index team and where necessary with collaborators within the data science sphere and those contributing data to the Eco-index database.
- **Consistent, professional reliability and kindness** in regard to hui, emails, phone calls etc. with your Eco-index team members (whānau) and those we work with.
- **Knowledge regarding effective communication** regarding databases and related data science aspects to, when necessary, explain to collaborators why certain data requirements are important for desired joint outcomes.
- **A value of Mātauranga Māori and Te ao Māori** or willingness to develop knowledge and respect of these.
- **A value of the natural world and desire to support biodiversity**.

Specific activities – assist to:

- Scope data
- Develop data aggregation protocols
- Communicate with Eco-index team regularly to problem-solve and make progress
- Discern what collaborators need/want and identify best ways to align them and Eco-index database objectives
- Create a database that can be used to generate multiple tailor-made “Eco-indices” report against particular pre-assigned indicators/metrics of biodiversity.
- Understand broader Eco-index programme research aims and timeline, support co-leads to hit annual targets including quarterly and annual reporting.
- Not required but if interested, there is possibility to assist with other miscellaneous research-related activities (e.g., manuscript preparation for publication).
- Generate an annual report on database progress and recommend next steps for furthering its development and utility (e.g., Research Aim 6: report on Approaches B and C)
- Liaise with website or app developers to deliver a public interface to display data.

Timeframe and Contract details

The position will begin when a suitable candidate is found. The Eco-index programme runs in entirety June 2020 - June 2024.

Fixed term: This position is fixed term of 2 years, with possibility of extension to a third year.

FTE: 1.0 (37.5 hours/week). Contract: through the University of Waikato in Kirikiriroa Hamilton.

Send your CV and expression of interest to monique.hall@waikato.ac.nz by 28 February 2021