

# TinT: Classification & Māori Data Ngā Upoko Tukutuku

## Background of Scholarship

Applications are invited for a PhD scholarship opportunity on exploring classification systems for Māori data. This scholarship is part of a research project - Tikanga in Technology: Indigenous Approaches to Transforming Data Ecosystems - supported by the NZ Endeavour fund. The successful applicant must be eligible to enrol at the University of Auckland.

## Primary Purpose of the Position

Undertake research activities as required to advance the Ngā Upoko Tukutuku Māori Subject Headings framework for cataloguing data within a Māori worldview. Ngā Upoko Tukutuku was developed by the Māori Subject Headings Project, jointly sponsored by LIANZA, Te Rōpū Whakahaui, and the National Library. The tool provides a structured path to a Māori worldview within library and archival cataloguing and description. It supports cataloguers and descriptive archivists to assign appropriate terms for the material, and helps users find those items within a framework they relate to. New terms are developed by Te Whakakaokao, the Ngā Upoko Tukutuku Reo Māori Working Group: <https://natlib.govt.nz/librarians/nga-upoko-tukutuku>.

To increase the utility and functionality of Ngā Upoko Tukutuku we are looking for a motivated student to use semantic technologies that promote Māori worldviews and the access to Māori data. The semantic technologies are likely to include the Resource Description Framework (RDF); ontology languages such as RDF Schema, OWL, and knowledge graphs; and query languages such as SPARQL. The research will extend on work here: <http://miriamposner.com/msh/>.

We propose that the successful applicant will:

1. Undertake a comprehensive review on approaches to ontology and query languages for non-English/Indigenous communities.
2. Extend the existing taxonomy for Ngā Upoko Tukutuku to a sophisticated ontology using frameworks such as RDF schema, the Web Ontology Language, Shape Constraints, and Knowledge graphs.
3. Develop an effective and efficient back- and front-end for accessing data in Ngā Upoko Tukutuku, using query languages such as SPARQL.
4. Empirically validate the ontology and query interface using different measures of performance.

## Knowledge & Skills

Essential:

- Expertise in computer science, ideally in the use of ontology and query languages
- Experience with Māori data would be ideal
- Expertise in quantitative and qualitative data analysis
- Excellent written and verbal communication skills.

## **Education & Experience**

Essential:

- A qualification in computer science or related computational discipline such as information systems, statistics, or computer engineering to meet the eligibility criteria for entry into the PhD programme for the University of Auckland
- Strong interest in data and using computer science to enhance the value of data for people, in particular Māori data
- Research experience with primary and secondary data collection and analysis.

## **Personal Attributes**

- Independent and flexible work practices
- Attention to quality and accuracy of work.

## **Application documents required:**

- CV
- Transcripts of previous degrees
- Two references of character.

## **Contact and email address for applications:**

Name: Professor Sebastian Link

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## **Closing date:**

1<sup>st</sup> August 2021