

Half-Year Report 2023

Centre of Machine Learning for Social Good

University of Auckland, New Zealand

Reporting Period: March 2023 to September 2023

Executive Summary:

The Machine Learning for Social Good Centre at the University of Auckland has achieved significant milestones during the first half of the year. We have successfully launched the centre, established key teams, launched a website for visibility and collaboration, and organized a highly productive National Hui. This report provides an overview of these achievements and outlines the center's progress toward its objectives.

<i>Milestone</i>	<i>Completion Date</i>
<p>Centre Launch and Team Formation</p> <p>Director's Team</p> <p>The centre was officially launched during the reporting period. The Director's Team, consisting of Yun Sing Koh, Gill Dobbie and Daniel Wilson, has been appointed to provide leadership and strategic direction for the center.</p> <p>Interdisciplinary Team</p> <p>To foster collaboration and expertise in various domains, we have assembled an interdisciplinary team comprised of members from diverse academic backgrounds within the University of Auckland. This team brings a wealth of knowledge and skills essential for tackling complex social challenges through machine learning. We have also hired a project manager and media manager to aid in the management of the centre.</p>	April 2023

<p>Advisory Group</p> <p>We have established an Advisory Group composed of experienced professionals from industry and research. The group consists of Dr. Todd Nicholson, Prof. Vipin Kumar, Dr. Aparna Taneja, Mr. Luke Spencer, Dan Te Whenua Walker and Dr. Yanchang Zhao. The Advisory Group plays a vital role in providing guidance, feedback, and support for our initiatives, ensuring alignment with real-world needs.</p>	
<p>Website Launch</p> <p>Promoting Exposure</p> <p>Our website (https://ml4sg.auckland.ac.nz/) was successfully launched to promote the center's activities and enhance its visibility. It serves as a valuable resource for individuals and organizations interested in machine learning for social good, providing information about our projects, events, and research.</p> <p>Collaboration Portal</p> <p>The website includes a dedicated section for collaboration, allowing interested parties to submit project proposals and express their interest in partnering with us. This portal will facilitate partnerships with organizations and individuals who share our mission.</p>	<p>April 2023</p>
<p>National Hui</p> <p>Objectives</p> <p>The National Hui, a pivotal event during this reporting period, aimed to achieve three primary objectives:</p> <ol style="list-style-type: none"> 1. Establish a set of governing principles for the center. 2. Build relationships and foster collaboration between diverse groups. 3. Gain insight into effective collaboration for driving real change using machine learning for social good. <p>Outcomes</p> <p>The Hui was a resounding success, bringing together over thirty participants from industry, research, local council, iwi, government, NGOs, and the</p>	<p>June 2023</p>

<p>community. Attendees specialized in domains with significant social impact, including environmental, health, and social issues. We facilitated a series of structured discussions to create a diverse and inclusive environment for discussion and to foster collaboration. We used a hybrid format to allow participants from various parts of New Zealand to participate.</p> <p>Insights</p> <p>The Hui generated high-quality conversations on a wide range of topics, including data governance, collaborative methodologies, and the potential of machine learning in addressing social issues. It facilitated meaningful discussions and has set the stage for us to establish governing principles in upcoming discussions.</p>	
<p>Flagship Project</p> <p>Collaboration with Te Korowai o Waiheke</p> <p>We have begun co-designing a flagship project for the Machine Learning for Social Good Centre, in collaboration with Te Korowai o Waiheke, a charitable trust established by the local community of Waiheke with a mission to eradicate predators from their island.</p> <p>Leveraging AI for Predator Eradication</p> <p>Our project leverages artificial intelligence technology to analyze imagery from 210 trail cameras as part of the ongoing stoat eradication initiative on Waiheke Island. Te Korowai o Waiheke has generously contributed stoat images, enhancing the AI model's training data for accurate stoat detection, significantly reducing the labor burden associated with image processing while extending its utility to other stoat-related endeavors. Given the challenge of trapping stoats on the island, with only four breeding pairs remaining in the Waiheke protection zone, reidentification of stoats across various trail cameras has become pivotal for closer monitoring and more effective pest control.</p>	<p>August 2023</p>
<p>Funding Applications</p> <p>University of Auckland Science/Research Development Fund</p> <p>In our ongoing efforts to secure the necessary resources for the center's growth,</p>	<p>September 2023</p>

<p>we have submitted an application to the University of Auckland Science/Research Development Fund. We have requested a grant of \$39,652 to support our projects over a two-year period. This funding will be instrumental in advancing our research and outreach efforts.</p>	
<p>Summer Research Scholarships</p> <p>We have designed multiple Summer Research Scholarships aimed at engaging university students in meaningful machine learning research projects with positive social outcomes. These scholarships provide a unique opportunity for students to contribute to our mission while gaining valuable research experience. One of these Summer Research Scholarships has been specifically crafted to support the creation of an eventual white paper for the Machine Learning for Social Good Centre.</p>	<p>July 2023</p>