

SUMMER RESEARCH 2024/25

PROJECT ABSTRACT



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

PROJECT # 30

SUPERVISOR/S:	Dr. Vimal Kumar, Nicholas Vanderschantz & Jemma Konig
PROJECT TITLE:	The Language of Cyber Security
FIELD:	Computer Science, Design, Cyber Security
DIVISION/SCHOOL:	HECS - Au Reikura School of Computing and Mathematical Sciences
PROJECT LOCATION:	Hamilton

PROJECT ABSTRACT:

How should we talk about cyber security and ethical hacking in society today? What visual and written communication is appropriate for teaching these complex principles in schools and undergraduate educational environments? We seek to understand how cyber security educational material should be presented to young people so that it enables a high degree of ethical, moral and community-oriented thinking, when in possession of tools and techniques that can be used both for defense and offence.

We will primarily focus on the design and linguistic features used in cyber education material and investigate the impact various design and linguistic elements have on the perception of cybersecurity tools and techniques by young people. To do this, we will first undertake a scoping literature review of the cyber security educational literature. Following this, we will curate a corpus of cyber security educational materials that are used in secondary school and tertiary educational settings in NZ and abroad. Through a visual and linguistic analysis we will identify the visual and linguistic attributes and features found in educational material. Once the attributes are developed they will be used to label and assess a large amount of publicly available cyber security material.

The work outlined here is required as the foundation for the development of a new package of work for Kumar, Konig, and Vanderschantz. Using the findings of this summer scholarship, a user observation study will be developed that tests the insights from the literature review and corpus analysis completed during the Summer Scholarship. It is anticipated that this user study will be offered as an Honours or Masters project in 2025 suitable for a Computing or Design student. Insights from this summer scholarship, and user studies completed following this scholarship, are hoped to inform external funding by Kumar, Konig, and Vanderschantz that seeks to design educational cyber security material for use in NZ secondary schools.

STUDENT SKILLS:

- Knowledge and interest in either linguistics, design, human computer-interaction, or cyber security
- Interest in the design and development of educational resources
- Interest in the design and development of resources for cyber security
- Academic writing skills
- Organisation & Time Management Skills

PROJECT TASKS:

1. Perform Scoping Literature Review
2. Curate Corpus
3. Perform Visual & Linguistic Analysis
4. Design User Study

EXPECTED OUTCOMES:

- Student's Research Poster (as per clause 6 of the [Scholarship regulations](#))
- Linguistic and design attributes to assess cyber security material
- A dataset of artifacts used in cybersecurity education labelled with the right attributes
- Report and poster on the work done
- A journal or conference publication (in the longer term)

