SUPERVISOR/S: Shaoqun Wu and Wendy Fox Turnbull

PROJECT TITLE: Building computer games that facilitate computational thinking for school kids

FIELD: Computer Science

DIVISION/SCHOOL: HECS - School of Computing and Mathematical Sciences

PROJECT LOCATION: Hamilton

PROJECT ABSTRACT:
This summer project will investigate ways of building a flexible and extendable framework for fun and engaging computer games to help school kids (Years 1-4) develop computational thinking skills, which is foundational in understanding how computers and algorithms work and being able to relate that knowledge to daily life and study experiences. The summer scholar will be part of a project team that consists of members from both the School of Education (SoE) and School of Computing and Mathematical Sciences (SCMS). The project will focus on indigenous technological needs and practice and the research outcome will inform and support an application for external research funding (TLRI). Dr Wendy Fox-Turnbull from School of Education is also applying for a summer scholar to contribute to the theoretical and pedagogical aspect of this project.

This summer scholar will design and develop a framework with two game prototypes based on the research findings in the fields of indigenous technology practice and computational thinking for children. The framework and prototypes will be used and tested with school teachers and kids in Nawton Primary School in 2022 in a pilot study for TLRI funding.

STUDENT SKILLS:
- Mobile programming
- Usability design

PROJECT TASKS:
- Investigate the existing mobile game frameworks
- Be involved in team discussion of computer thinking game design
- Develop a framework for building computer thinking games
- Prototype two computer thinking games
- Be involved in team discussion of game evaluation and testing plan
- Document and package the program code

EXPECTED OUTCOMES:
- Student’s Research Poster (as per clause 6 of the Scholarship regulations)
- A computer framework
- Two mobile games
- Program package and documentation
- An evaluation and testing plan