SUPERVISOR/S: Judy Bowen
PROJECT TITLE: Measuring Quality of Life Metrics for Smart Environments
FIELD: Computer Science
DIVISION/SCHOOL: HECS - School of Computing and Mathematical Sciences
PROJECT LOCATION: Hamilton

PROJECT ABSTRACT:
Performing user evaluations on proposed designs and implementations of interactive software is recognised as an important part of software engineering processes. As software becomes more ubiquitous and the types of software systems we propose become more embedded in peoples' lives, the potential for software to impact peoples' quality of life (QoL) increases. This is most evident in IoT-based smart environments, where environmental sensors, personal monitoring technologies and AI-like systems combine to create living environments that purport to support people in independent living (especially those of advanced years or with medical conditions). Current evaluation processes do not take into account the intrusiveness of such systems or the impact they have on autonomy and peoples' behaviours. This summer project is part of larger work in this domain and will contribute to the development of practical software evaluation methods targeted at QoL impacts. The work will entail considering how well existing QoL measures map to existing evaluation processes; determining suitable metrics for measuring QoL as it pertains to IoT systems; and developing extensions to evaluation processes which incorporate these metrics. It requires a student with an interest in HCI and some experience with designing and conducting user studies.

STUDENT SKILLS:
- Understanding of HCI evaluation techniques
- Ability to design and run evaluation studies

PROJECT TASKS:
- Gather existing quality of life measures (e.g WHO documentation)
- Background reading of smart environment literature
- Derive QoL factors for a specific domain of smart environments
- Undertake mapping between existing QoL measures and methods to the factors derived in task 3
- Research user evaluation methods
- Select sample evaluation method(s)
- Propose ‘proof-of-concept’ for extending selected evaluation methods to incorporate a subset of the derived QoL factors

EXPECTED OUTCOMES:
- Student’s Research Poster (as per clause 6 of the Scholarship regulations)
- Three collections of literature (QoL, smart environments, user evaluation methods) along with summaries relating to the tasks above.
- Proof of concept method to satisfy the task requirements.
- Outline of how the method can be applied in the given domain.