## Your developers…

Jack McIvor, jmci873, 5999650. Specialising in Engineering Science.

I am a fifth year BE(Hons)/BCom conjoint student with a degree focus in operations research and data analytics. I have programming experience in C and MATLAB (engsci 131; A+, engsci 233; A+, engsci 331 A), Python (engsci 761; A+, Summer Research Scholarship) and web development (Summer Research Scholarship). I also have a keen interest in Machine Learning and follow current developments in the field.

Nayoung (Monica) Jung, njun658, 6328365. Specialising in Electrical and Electronic Engineering. I am a third year BE (Hons) student. I have experience in C and MATLAB (engsci 131), Python( compsci 101) and C++ (compsys 202). I am very interested in game development.

## The project…

We are going to create a simple arcade style game with the goal of entertaining an 8 year-old and his friends. The game will be a redesign of Atari’s 1977 Combat, updated with modern graphics and exciting new gameplay elements. It will be able to be played in a single player, local multiplayer or online multiplayer mode. Development will be completed in the Java programming language, with networking managed in a secure way with Python.

## Game features…

* All minimum specifications, as well as conforming to class protocol.
* Engaging background music and sound affects.
* Attractive menu screens, including an easy-to-use help and options menu to enable/disable features.
* Modern graphics.
* An artificially intelligent enemy tank.
* An evolutionary neural network to train the AI
* Local multiplayer on the same keyboard.
* Random level generation and ‘level builder’ mode.
* Intelligent threading.

## Tentative schedule…

Week 3: have good handle on Java and begin building GUI, collecting sound/sprite resources

Week 4: basic gameplay mechanic working

Week 5: all minimum specs met except enemy AI

Week 6: enemy AI finished and local multiplayer

Week 7: perfect design, add remaining gameplay elements which will maximise fun

Mid-sem break: learn Python

## Foreseen challenges…

**Wasted features/ conforming to protocol.**

Additional features will be added to the single player mode only and will be able to be enabled/disabled via an options screen.

**Lack of interest/ continued playability by the user.**

Extensibility by switching on/off different features. Levels of AI difficulty to keep the game challenging. Random level generation to keep gameplay fresh. Online mode to engage with friends.

**Getting behind schedule.**

Complete minimum specifications first to get a working prototype. Adding contingency time to schedule.

**Lack of collaborative effort with partner.**

Weekly meetings to check how we are doing. Close use of the git protocol to ensure parallel development.