

# TetrisGameAI

## Culminating Project for ICS3U1

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Work log can be found in the commit history of this [GitHub repository](#)

*Links may not work properly if you are viewing a PDF version of this file.*

## Description

- Clone of the classic Tetris game
- Includes a single player mode and AI modes

## Project Organization

Package	Subpackage	Description
<a href="#">ai</a>		files related to the AI
<a href="#">backend</a>		files related to the processing and game logic
<a href="#">frontend</a>		files related to the JavaFX components displayed on screen
<a href="#">frontend</a>	<a href="#">aiFastTrain</a>	files related to the AI fast training mode
<a href="#">frontend</a>	<a href="#">aiPlay</a>	files related to the AI vs. Player mode
<a href="#">frontend</a>	<a href="#">aiTrain</a>	files related to the AI GUI training mode
<a href="#">frontend</a>	<a href="#">aiWatch</a>	files related to the AI watch mode
<a href="#">frontend</a>	<a href="#">base</a>	files related to abstract classes that are used in displaying
<a href="#">frontend</a>	<a href="#">common</a>	files related to GUI elements that are shared between multiple modes
<a href="#">frontend</a>	<a href="#">instructions</a>	files related to the instructions of the game
<a href="#">frontend</a>	<a href="#">player</a>	files related to the human player mode
<a href="#">frontend</a>	<a href="#">menu</a>	files related to the main menu
<a href="#">frontend</a>	<a href="#">Game.java</a>	the class that is the entry point into the game
<a href="#">unittests</a>		files related to the JUnit test files

## Features

- Various indicators on the side that show the score, level, lines cleared, etc.
- Two AI training modes: GUI training mode which shows the training game play and fast training mode which only shows the statistics
- Includes an AI watch mode where one AI can be loaded to play multiple games
- AI is trained using a genetic algorithm, genes can be found in the [Genes](#) class

- Window resizes automatically according to the size of the screen (80% of the height or width of the screen, depending on which is smaller)
- Trained [population](#) and [organism](#) files are included.