This project utilizes a Python-based tech stack. Different pieces of this project have very specific versioning requirements for each package installation in order to work properly, and should be able to be run on Windows, Linux or Mac systems.

## Requirements

* [Anaconda3 (4.2.0 or later)](https://www.anaconda.com/distribution/)
  + Python 3.5.6
  + Optional: NVIDIA GPU with CUDA
* [Visual Studio Code](https://code.visualstudio.com/Download)
  + Recommended: [Anaconda Extension Pack](https://marketplace.visualstudio.com/items?itemName=ms-python.anaconda-extension-pack)
  + Recommended: [Python Extension Pack](https://marketplace.visualstudio.com/items?itemName=donjayamanne.python-extension-pack)

## Python Packages

* Conda 4.5.11
* PIP 18
* SciPy / NumPy
* Matplotlib
* PyGame
* OpenCV
* CuDNN (CUDA GPU Neural Network)
* TensorFlow / TensorFlow-GPU
* Keras

# Environment Setup

1. From Anaconda Prompt or Visual Studio Code terminal add cogsci and conda-forge package channels:

**conda** config –-add channels cogsci

**conda** config –-add channels conda-forge

1. Update(root)/(base)with packages from the new channels:

**conda** update conda

**conda** update –all

1. Create a new environment preinstalled with the correct python, conda, and pip versions:

**conda** create -n flappy python=3.5 conda=4.5.11 pip=18

* + Neglecting to specify package versions in this step may put your environment in a non-working state

1. Activate flappy to set it as your working python environment, and update the default packages:

**conda** activate flappy

**conda** update --all

1. Install **conda** package dependencies:

**conda** install scipy matplotlib pygame opencv jupyterlab

1. Install **pip** package dependencies:
   * Installing TensorFlow and Keras packages in the incorrect order may prevent them from working correctly

**pip** install cudnn-python-wrappers

**pip** install tensorflow-gpu

**pip** install tensorflow

**pip** install keras