**Artificial Intelligence Research Assignment**

**Google DeepMind**

Founded in London 2010 then subsequently acquired by Google in 2014, DeepMind is the world leader in artificial intelligence research and its application for positive impact.

Fueled by a mission to develop an adaptive AI smart enough to solve any problems presented to it from climate change to radically improved healthcare, as well as many other problems that suffer from painfully slow progress.

DeepMind incorporates many sciences simultaneously, spanning everything from engineering to cryptographic analysis. Just like a child, DeepMind learns from and adapts to its data while being guided by the development team of scientists from all walks of life. In more technical terms, it is a mixture of deep neural and reinforcement learning.

While Google DeepMind is not yet complete, it has already accomplished cynosural feats including a single program that has taught itself how to play all forty-nine Atari games using only raw pixels as input. In addition, AlphaGo has defeated the world champion in the game of Go following in the footsteps of its predecessor, DeepBlue.

Another noteworthy achievement realized by AI is the growing ability to model lively ecosystems and complex logic networks through historical data and reinforcement learning. The teams at DeepMind have impressively created simulations for philosophical puzzles such as the Prisoner’s Dilemma and others. This latest innovation in understanding problems can enable researchers to construct lifelike test environments for everything from new judicial laws to city traffic networks.

Concerns of privacy have began to surface as DeepMind begins to dabble in the healthcare and sensitive information containing sectors, however the teams at DeepMind believe that this is a fair trade if the number of victims of [avoidable life-changing conditions](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC26554/) and/or [death](http://www.bmj.com/content/351/bmj.h3239) is significantly reduced, for example.

<https://deepmind.com/research/dqn/> DeepMind article on reinforcement learning.

<https://deepmind.com/research/alphago/> AlphaGo Official Page.

<https://en.wikipedia.org/wiki/Deep_Blue_(chess_computer)> DeepBlue Wiki Page.

<https://deepmind.com/blog/understanding-agent-cooperation/> DeepMind’s Simulations on Prisoner’s Dillema and others.

<http://www.wired.co.uk/article/deepmind-nhs-data-sharing-privacy-concerns> Article on DeepMind privacy concerns.

<http://www.bmj.com/content/351/bmj.h3239> Research on avoidability of hospital/staff related deaths.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC26554/> Research on rates of adverse effects in patients due to neglect or carelessness.