Modern AI for Games - Report on Individual Assignment

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***Abstract*— The abstract goes here. Please try to make it less than 150 words. We suggest that you read this document carefully before you begin preparing your manuscript.**

This template is for LaTeX users of the Advanced AI in games class. Authors should use this sample paper as a guide in the production of their report(s).

I. Introduction

THIS report outlines the implementation and results gained from the use of Artificial Intelligence methods to control Ms. PacMan in a provided test bed framework[[ref]]. The three methods chosen to implement are based on an Evolutionary Algorithm, a Neural Network with Backpropagation, and Monte Carlo Tree Search.

The following sections describe each implementation. The methods were implemented in Java[[ref í github?]] and at the beginning of each section there will a reference to the Java package name containing the implementation classes.

Plots of the generated data - performance measures an experiments - were made with simple R scripts that can be found in the `plots` directory within the supplied implementation project.

IF you have an introduction for your paper, put it here. This sample file is intended to serve as a "starter file." You need to replace the text in this file with the text that makes up your paper.

A. Subsection Heading Here

If applicable, subsection text goes here.

1) Subsubsection Heading: Insert any subsubsection text here. Same thing as before — you may or may not have any subsubsections.

2) About This Template: This template is for LaTeX users of the Advanced AI in games class. Authors should use this sample paper as a guide in the production of their report(s).

II. Results

The main results and findings go here.

Do not number an equation if it will not be directly cited in the report. In order to avoid numbered equations, use \begin{equation*}–\end{equation*}, \[–\], or $$–$$. For example:

$$a = b + c,$$

$$\dot{x} = f(x, u) + g(x, u),$$

or

$$\ddot{s} = G(s, t)$$

where f, g, and G are functions.

Note that Equation (1) below is numbered! It is produced using \begin{equation}–\end{equation}:

$$F_i(P_i) = a_i + b_i P_i + c_i P_i^2 \tag{1}$$

where a_i, b_i, and c_i are coefficients of unit i, and P_i represents some value for unit i.

Aligning equations can be done with either the align or eqnarray commands. Recently, \begin{align}–\end{align} has gained popularity over \begin{eqnarray}–\end{eqnarray}.

Equation (2) is produced using \begin{align}–\end{align}:

$$\begin{aligned} \dot{x}_l &= \sum_{i=1}^{m} \frac{c_{P_{x_i}} e^{k_{x_i}\bar{x}_i} + c_{N_{x_i}} e^{-k_{x_i}\bar{x}_i}}{e^{k_{x_i}\bar{x}_i} + e^{-k_{x_i}\bar{x}_i}} \\ &\quad + \frac{1}{2}\sum_{j}^{q}(c_{Pu_j} + c_{N_{u_j}}) \\ y &= A_0 + A_1 \tanh(K_x\bar{x}) + B\tanh(K_u\bar{u}) \\ &= F(x), \end{aligned} \tag{2}$$

where $F(x)$ is a function.

Equation (3) represents the same equation produced using \begin{eqnarray}–\end{eqnarray}:

$$\begin{aligned} \dot{x}_l &= \sum_{i=1}^{m} \frac{c_{P_{x_i}} e^{k_{x_i}\bar{x}_i} + c_{N_{x_i}} e^{-k_{x_i}\bar{x}_i}}{e^{k_{x_i}\bar{x}_i} + e^{-k_{x_i}\bar{x}_i}} \\ &\quad + \frac{1}{2}\sum_{j}^{q}(c_{Pu_j} + c_{N_{u_j}}) \\ y &= A_0 + A_1 \tanh(K_x\bar{x}) + B\tanh(K_u\bar{u}) \\ &= F(x), \end{aligned} \tag{3}$$

where $F(x)$ is a function. You get the idea!

A. Example of a Figure

Below is an example of a floating figure using the graphicx package. Note that \label must occur AFTER (or within) \caption. For figures, \caption should occur after the \includegraphics. To reference a figure, use the word Figure followed by the figure number. Here is an example: Figure 1.

B. Figures and Tables

Please follow the style in this sample paper when generating your figures and tables.

C. Page Limit and Overlength Page Charges

A paper submitted to this conference should be prepared in a single-spaced, two-column format. Its length must be kept to 8 pages or less. In exceptional circumstances, up to two additional pages will be permitted for a charge of AUD$100

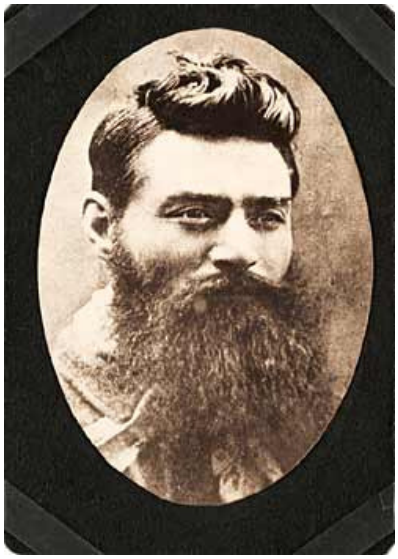

Fig. 1. A famous Australian bush-ranger: Ned Kelly

TABLE I
PAGE LIMIT

Page limit:	8
Excess page charge:	AUD$100/page

per additional page. Table I shows the page limit and page charge schedule.

Another example of a table is shown in Table II.

TABLE II
A SECOND TABLE

Method	Mean time	Best time	Mean cost	Maximum cost	Minimum cost
A	928.36	926.20	124793.5	126902.9	123488.3
B	646.16	644.28	124119.4	127245.9	122679.7
C	1056.8	1054.2	123489.7	124356.5	122647.6
D	632.67	630.36	123382.0	125740.6	122624.4

Citations are included like so [1]. Multiple citations appear like this [2], [3].

III. CONCLUSIONS

The conclusion goes here.

APPENDIX

Put your appendix here if you have any.

ACKNOWLEDGMENTS

Add acknowledgments if any.... The authors would like to thank Mr. XYZ for his/her help.

REFERENCES

[1] A. Great, *This is the book title*. This is the name of the publisher, 2006.
[2] F. Author, S. Author, and T. NonRelatedAuthor, "This is the paper title," in *This is the proceedings title*, 2008, pp. 1–8.
[3] B. Myself, "This is the title of the journal article," *This is the name of the journal*, pp. 1–30, 2007.