**Project Proposal From**

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| Learner Name | Matthew Charles Beardwell |  | Candidate number | 3010 |
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| Centre Name | King’s College London Mathematics School |  | Centre Number | 10953 |
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| Unit Name | Can my computer guess the language of a word? |  | Unit Number | P304 |

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| Section One: Title, objective, responsibilities | |
| Title or working title of project (in the form of a question, commission or design brief)  Can my computer guess the language of a word?  Project objectives (eg, what is the question you want to answer? What do you want to learn how to do? What do you want to find out?):  I want to learn how to build a feed-forward neural network that betters its guess, each time it is ran (ie. with a backpropagation algorithm). I want to find out the mathematics of the process and be able to understand and explain it. I also want to gain a general grasp of the field. For example - to make it easier to learn to build different types of neural networks. The task is to find something my network can predict about a word. I will start by trying to guess the 'Hangman difficulty of a word' as practice then I will investigate making the network guess the language of a word. | |
| Section Two: Reasons for choosing this project | |
| Reasons for choosing the project (e.g., links to other subjects you are studying, personal interest, future plans, knowledge/skills you want to improve, why the topic is important):  I would like to study Mathematics and Computing or just Computer Science on its own because I enjoy the puzzle of thinking of what I want a computer to do and then trying to write instructions that will fit this purpose as fast and effectively as possible. This EPQ will link strongly to the course’s topics and increase my aptitude in programming and understanding. Machine learning is a small field that is becoming increasingly larger and, in the future, machine learning will play a large role. | |
| Section Three: Activities and timescales |  |
| Activities to be carried out during the project (e.g., research, development and analysis of ideas, writing, data collection, numerical analysis, rehearsal techniques, production meetings, production of the final outcome, administration, evaluation, preparing for the presentation, etc):  Creating a bivariate data set from the 6 languages  Program the neural network  Debug the neural network  Literature review  Introduction  Writeup/conclusion  Methodology  Additional Fixes | How long this will take:  1 Week  3 Weeks  2 Weeks  1 Week  1 Week  1 Week  4 days  4 days |
| Milestone one: 8th November  To have all of my program completed and working with a guessing accuracy higher than random chance.  Target date (set by tutor-assessor):  Milestone two: 2nd Feb  To have written my full EPQ.  Target date (set by tutor-assessor): | |
| **Section Four: Resources** | |
| What resources will you need for your research, write up and presentation (eg, libraries, books, journals, equipment, rehearsal space, technology and equipment, venue, physical resources, finance):  **The internet (I.e. online resources such as articles and videos) and a laptop.**  What will your areas of research cover?  **Machine learning in Computer Science**  **Matrices and their transformations**  **Calculus** | |
| **Comments and agreement from tutor-assessor** | |
| Is the learner taking this project as part of the Diploma? Yes/No  If yes, which Diploma are they taking? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Comments (optional):  Is project derived from work which has been/will be submitted for another qualification? Yes/No  Which qualification (title and unit)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Comments (optional):  I confirm that the project is not work which has been or will be submitted for another qualification and is appropriate.  Agreed: (name) (date) | |
| **Comments and agreement from project proposal checker** | |
| Comments (optional):  I confirm that the project is appropriate.  Agreed: (name) (date) | |