

DeepMind cover letter

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SELF INTRODUCTION

I am writing to express my interest in the *Researching Engineering Internship* programme you will be running at DeepMind this summer. I am a second year undergraduate student in Theoretical Physics at Queen Mary, University of London, with a passion for creativity, science and software engineering. I have a diverse history of experience, with a background in art, where I have been an exhibiting artist working collaboratively with dancers exploring drawing and dance. I have also been a freelance web developer, leading creative front-end web development projects, graphic design, and most recently a software development internship. Having freelance and creative experience has given me the insight needed for leading projects and the self determination required for research based projects.

Some important things to talk about here:

Yobota internship:

During the 2018 Summer break, I undertook a Python software engineering internship with Yobota; a mid-sized fintech startup in London, who have created a lean cloud based banking platform. I was delegated to the API / integrations team and given the exploratory project of creating an internal client for payment initiations using UK's new banking initiative the OpenBanking API. The client that I wrote had to conform to banking industry standards, and employed technologies such as OAuth bearer tokens, a REST API for internal platform use, test driven development life cycle, continuous integration using Jenkins and written using Python / Django / DRF. *with testing suite pytest*

As part of team building, I gave a company presentation on my research into OpenBanking. And for project planning, I took part in a daily morning standup, and weekly sprint planning meetings, where I set my own goals, and recounted updates on the progress of my integration.

Science / Maths research

Throughout my degree, I have been learning techniques in mathematics, programming, and physical laws to interrogate, model and analyse data from physical systems. I have gotten the most satisfaction from the following ... intellectually stimulating

During the the module *Introduction to Scientific Computing*, we were taught how to model many different mathematical functions and analyse datasets; extracting relevant physical information from them. Of note, we learned about linear regression algorithms and curve fitting and image manipulation and cleaning using discrete Fourier transform; which drew upon my mathematical knowledge of linear algebra, and calculus.

As a final project, I researched and analysed gravitational waves, using the public dataset from the LIGO interferometers. Using Fourier transform to clean the signals, and a linear regression to fit.

calculus, differential equations

In first year, I took part in a collaborative group project using Python and Matplotlib to investigate financial data sourced from the World Bank, collating multiple years of financial

information about specific and grouped countries, then analysing and normalising for inflation the results to plot using Matplotlib's PyPlot, the movement of variables throughout a set time period in specific and grouped countries.

I worked as a freelance web dev's lead to working as a lead developer for Stillness, a yoga and meditation teaching studio, with an online learning environment

Web development experience.

web developer, where I used my creative design background to theme websites

Before commencing my undergraduate study at Queen Mary, I worked as a freelance web developer, gaining experience in PHP, JavaScript, HTML, CSS. Some relevant projects during my freelance time, that I have been involved in:

- Being part of a team building an online learning platform with e-comms, on an AWS EC2 instance.
- WordPress plugin and theme developer - coding in PHP for front end as well as server side tasks.

My interest in DeepMind;

I am interested in creating models that will help the betterment of scientific research. while pushing scientific boundaries I believe that machine learning is, and will continue to be an important aide for scientists, enabling them to look deeper into data heavy research, machine learning to recognise patterns and behaviours that might otherwise go unnoticed. My career goals are to be able to use the scientific method to build models. In order for machine learning to be able work with these data, the algorithms must first be written... As part of a larger understanding of what intelligence is, and learning models.

using ML libraries to enable this. I found that through exploring the LIGO dataset,

I am interested in the

Sign off

I believe that exploration into linear curve fitting algorithms, writing an restful API client

I believe that with my background in creativity, analytical thinking, coding, both in PHP web development, system administration, and now data analysis with python, I would be an ideal candidate for undertaking this internship, and that I would be able to add much in collaborating with a team of like minded individuals.

Using ML to

career goals →
to help