I am a final year Bioengineering PhD student looking to apply and develop my quantitative research skills outside of an academic setting. I have particularly enjoyed the computational aspect of my PhD as well as the problem solving, and have taken time to expand my skills via online courses in C++ and machine learning. As a university sub-warden, and a carer I have experience working in teams and difficult situations and would like to be part of an innovative and exciting technology or quantitative research team.

Skill set -Participate in cutting edge research and apply of machine learning and data science methodologies to financial markets across asset classes and functions

-Engineer innovative solutions on terabyte datasets using a variety of approaches such as time-series forecasting, predictive modelling, cluster analysis, dimensionality reduction, collaborative filtering and recommender systems

-Join a dynamic team of quantitative researchers, and have a tangible impact on the bottom line

**About You**

J.P. Morgan is looking for additional interns with a Machine Learning / Data Science background for our 2018 Associate Internship Program. We're looking for innovative problem-solvers with a passion for developing cutting-edge data-driven solutions that support our global businesses.

**Qualifications:**

-Enrolled in a master’s or Ph.D. degree program in math, sciences, engineering, computer science or other quantitative fields

-No prior experience in financial markets required

-Core expertise in statistics and machine learning techniques

-Mastery of advanced Machine Learning / Data Science theory, techniques and tools

-Programming experience with one or more of Python, R, Matlab, Tensorflow, optionally C++

-Excellent analytical, quantitative and problem solving skills and demonstrated research ability

-Entrepreneurial spirit and the will to “change the world”

-Strong communication skills and the ability to present findings to a non-technical audience

**Please describe your motivation for applying to this opportunity within JPMorgan Chase & Co. Please give details of any skills you have that would be relevant to this area (300 words)**

I have immensely enjoyed the learning process of my PhD and have striven to learn new mathematical and computing skills throughout. As such, I am now confident with Java, bash scripting and Matlab with C++ and Python familiarity. The enjoyment of learning and the challenge is one of the key things that attracts me to the machine learning internship program. I feel confident that I have the quantitative and problem solving skills necessary for innovative research and would like an opportunity to apply this skillset that I have developed at Imperial College over the last 4 years to a fresh area outside of academic research and within a similarly prestigious firm.

As a PhD student, part of my research project focused on the development of an agent based model of a mouse lymph node, modelling more than 50000 immune cells over 2 weeks and then analysing their behaviour during lymph node swelling. The java-based model was submitted to a High Performance Computing center and Matlab was used to analyse the large amounts of data. The sensitivity analysis included use of Monte Carlo methods, with Latin Hypercube sampling and partial rank correlation co-efficient comparison used to assess linear and monotonic relationships and extended Fourier amplitude sensitivity test to assess non-monotonic relationships. **My specific interest in machine learning began due to my background in** neuroscience and **I recently started an online Coursera Course so that I can integrate machine learning techniques into my PhD project.**

Finally, I always have the motivation to learn and will to succeed. For example I recently participated in an 8 week ‘Girls who code’ CSS and HTML course, which was not only inspiring but also allowed us to compete with each other to produce the best starter website, in which I came 2nd overall.

**Please write about a recent news article that has interested you and how you feel that subject would relate to Please write about a recent news article that has interested you and how you feel that subject would relate to JPMorgan Chase & Co. (200 words)**

**. (200 words)**

Recently I read an article title ‘Damage Control’ in the Economist which focused on how medical techniques learnt on the battlefield are helping to improve the survival rate for victims of mass terror attacks.

Until recently trauma care had not improved in two decades but now critically injured patients are now transported to expert hospitals even if it means passing local hospitals on the way, which are more likely to be filled with walking wounded. This allows the experts to responding in a more skillful way and gaining experience for the future.

This highlights how with similar resources and modes of transport (ambulance/ambulance staff), using well planned hub and spoke systems and having clear measures and routines in place, removes the decision making from individuals under pressure, resulting in better performance. Although it may seem sensible to take patients to a local hospitals the better procedure is applying the bare minimum to keep them alive and transporting them to a specialist hospital. This shows that it is important to both be open to new techniques and procedures that may not be what is the current norm, in addition to learning and translating techniques from alternate fields.

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