

1st October 2019

Reference: Nicholas Abad

To whom it may concern,

It is a pleasure to provide a letter of recommendation for Nicholas (Nick) Abad

Nicholas studied for the MSc in Data Science at Lancaster University between October 2017 and September 2018. The MSc in Data Science is led by the Department of Mathematics and Statistics, ranked 5th in the UK for research in the mathematical sciences in REF2014 and the School of Computing and Communications. The MSc in Data Science has established itself as one of the UK's premier training programmes in data science with student's undertaking a ten-week industrial placement to complement the taught component of the course.

It was my pleasure to be Nick's academic supervisor on his industrial placement. Nick's placement was with Co-op Insurance in Manchester and the aim of the placement was at improving motor insurance modelling. Nick fully embraced the opportunity of implementing the skills he had learnt in his taught modules in a real world environment. Nick was working with membership data and was seeking to identify useful information that the Co-op could use from this data in modelling conversion rate, risk severity and retention rate for motor insurance. Given the apparently unrelated nature of Co-op membership data to motor insurance data this was an ambitious project to find unexpected links in the data using modern machine learning techniques. Nick carried out the research in an excellent manner using random forests and in particular XGBoost. Nick successfully discovered predictive power within the Co-op membership data for retention rates (the likelihood of an individual renewing their motor insurance policy). Nick wrote up his findings in one of the best MSc dissertations I have read. (I have supervised over 60 MSc dissertations and second marked a similar number of dissertations.) Therefore Nick fully deserved the excellent distinction mark he was awarded in the dissertation.

Alongside Nick's obviously excellent academic ability, I found him to be a hardworking and conscientious individual. He is able to use his own initiative to solve problems but he is also willing to listen to advice. Therefore I have no hesitation in recommending Nicholas to you without reservation.

Please don't hesitate to contact me if you have any further questions concerning Nicholas.

Yours sincerely,



Prof Peter Neal

Professor of Statistics

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