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Mike Coughlan
Chief Engineer
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Dear Mr. Coughlan,

I have recently finished a Ph.D. at the University of Cambridge concerning the mathematical modelling of granular physics and I am currently seeking employment as an engineer within the F1 industry. While I appreciate that Williams are not currently advertising for a relevant position I would be most grateful if you could have a look over my CV to see if my experience and skills would be suited to a role within the team.

My formal education has hereto focussed primarily on applied mathematics. My undergraduate and masters degrees mainly concentrated on a very theoretical and rigorous treatment of fluid dynamics. My Ph.D. initially aimed to carry on in a similar fashion but instead I chose to pursue an experimental and numerical avenue for my research, introducing me to a more physical and engineering approach to understanding real-world problems.

Conducting postgraduate research has required me to approach multifaceted problems in a logical and structured manner, and has provided me with experience in communicating complex ideas to both technical and non-technical audiences. My Ph.D. had a heavy emphasis on designing and performing experiments, as well as using computers extensively to analyse large amounts of data and solve predictive models. I used MATLAB for the majority of my calculations, and took great pleasure in making my (and others') code run as quickly as possible: extensively employing techniques such as vectorisation, and using the C extensions (MEX) framework to write time critical routines. I believe that the experience I have gained in the last few years could be extremely useful in a time-pressured environment.

During my Ph.D. I became heavily involved in the university's Formula Student team, where I was one of 5 group leaders and oversaw a large part of the engineering programme. As well as this, I simulated and designed the intake and exhaust package, writing some custom software to aid the simulation process. I found the challenge of working in a high-pressure team environment incredibly exciting and rewarding, which led me to decide that I wanted to leave academia and pursue a competitive engineering career. Given Williams position as one of the biggest teams in F1, and the clear intent it has for the future, I believe it would be a fantastic opportunity to be part of the team as it builds on this years successes.

I have been an ardent Formula One fan for many years. As I worked through my university education, I quickly found that the engineering behind the cars started to interest me as much as, if not more than the races and the championships themselves. I would love the opportunity to combine my passion for the sport with my scientific background, and work in the competitive and challenging environment of such an innovative Formula 1 team.

Given the nature of the work that constituted my Ph.D., I believe that a position that involves a substantial amount of coding whilst retaining a need to understand the underlying physical principles would be ideal. Vehicle Dynamics, Simulation and Aero tools are all positions that I think I could perform very well in.

Should you have a position that you feel would be suitable for me either now or in the future, I would be grateful if you would consider my CV, which I am attaching.

Yours sincerely,

Alexander Holyoake