Hi,

I am writing to submit my application for the position of Deputy Director. My name is Waldy and I am passionate about the applications of data-driven, quantitative methods to solve real-world optimization problems, specifically on how Artificial Intelligence (AI) and Operations Research (OR) methodologies can synergise to address increasingly dynamic real-world problems. I have over 10 years of working experience in the domains of Data Science, Operations Research, IT project management, government procurement and public policy. Having deepened my technical and research expertise in AI by obtaining a PhD, I see myself as the bridge that connects the gap which often exists between business needs and technical solutions.

I completed my PhD programme in Computer Science majoring in Intelligent Systems and Optimization under the Artificial Intelligence & Data Science Research Group in Singapore Management University. My research focus is on how advanced AI techniques such as Machine Learning and Multi-Agent Systems can be infused with Classical OR techniques to solve complex, dynamic real-world combinatorial optimization problems, specifically those pertaining to routing and scheduling. In my PhD dissertation, I published a total of 5 first-authored papers in reputable AI conferences. In addition, my research work focuses on real-world applications and I developed models and algorithms with various industry partners such as Fujitsu-SMU Urban Computing and Engineering (UNiCEN) Corp Lab, AI Singapore, Uparcel and Home Team Science and Technology Agency (HTX).

Prior to my PhD candidature, I spent a total of 7 years working in the government sector in various roles including Data Science, OR, IT project management, government procurement and public policy. My training and experience have allowed me to have a keen eye on how to help organizations and policymakers make better decisions using data-driven, quantitative methodologies. In my previous roles, I worked as a pioneering member in the Data Science and OR units. My role involved applying OR and Data Science techniques such as linear programming, discrete event simulation and Machine Learning to optimize resources and operations. Some projects that I was personally involved in include developing a facility location model to determine optimal locations of certain facilities all over the island and using discrete event simulation to simulate manpower flow in the organization with the aim to project future manpower outlook of the organization. I learnt the importance of balancing the needs and requirements of various stakeholders from both business and technology to ensure smooth development and deployment of the solutions.

I am currently a Data Scientist (Optimization) in Hyundai Motor Group’s very first smart factory innovation center in Singapore and am part of the AI Research Center. I work closely within a cross-functional team consisting of ground operators, manufacturing engineer, business analyst, UI/UX designer and IT specialist to develop technical solutions within the smart factory context such as developing novel model to measure factory’s overall equipment effectiveness and optimizing the routing algorithm for autonomous mobile robots. Despite not having a background in automotive manufacturing, I am able to adapt the skills and techniques that I learnt from other domains to solve complex problems in a smart factory context.

Although I did not hold a formal managerial role, in my current and previous roles, I performed dual roles as an analytics translator and a data scientist. Within a cross-functional team, I plan, coordinate and execute tasks with other team members and work closely with business users and other stakeholders such as ground operators, vendors and even senior management. As a mid-career entrant to the PhD programme, I value added as a research mentor to junior PhD students and Masters students. In addition, outside my professional capacity, I have been actively mentoring and coaching youths and young adults in church for more than 10 years.

I am excited to see how my skills and experience in both public and private sectors, and academia will be able to contribute to your organization by leveraging a synergistic relationship between Data Science, AI and OR to make sense of the data and utilize them to make complex decisions in the healthcare domain. I would love to have an opportunity to discuss how I can value-add in this role and to find out more about what the role entails. Attached is my resume and here is my LinkedIn profile:<https://www.linkedin.com/in/waldy-joe-46a399a7> and my personal page: <https://waldyjoe.github.io/>

Regards,

Waldy