Hi,

I am writing to submit my application for the position of XX. My name is Waldy and I am passionate about research and development of innovative solutions and 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. In addition, by leveraging on my work (life) experience and my accumulated knowledge and skill sets, I am also passionate about teaching and mentoring the younger generation both in professional and non-professional capacities.

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 and 2 second-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, geospatial analysis and data visualization tools to make better decision on how to optimize resources and operations. Some projects that I was personally involved in include developing a facility location model to determine optimal locations of security facilities all over the island, developing discrete event simulation to simulate manpower flow in the organization with the aim to project future manpower outlook of the organization and using geospatial analysis tools to inform patrolling decisions. 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 and subsequently the Data Science and AI team. I work closely within a cross-functional team consisting of ground operators, manufacturing engineer, business analyst, UI/UX designer and IT specialist to research and develop technical solutions within the smart factory context such as novel model to measure factory’s overall equipment effectiveness, analysis dashboard for mobile robot operations and optimization of the routing algorithm for autonomous mobile robots in Digital Twin simulator. 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 inspire the younger generations towards life-long learning and passion for not just research and development but also deployment and application towards making a difference in the society. 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