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**To**  
*Hiring Manager,*

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Hi!

I hope this letter finds you well.

Nearly 16 weeks ago, I was delighted to receive the invitation to interview for the 6-month off-cycle AI & Data Science Associate Internship Program. I deeply value this opportunity and, despite having a hard time in writing my doctoral thesis, have prioritized daily efforts to prepare for this interview by diligently working on the project components. Today, I am pleased to formally submit my work and am confident that the quality of my submission reflects both my technical expertise in machine learning and data science and my enthusiasm for contributing to innovative solutions, positioning me as a strong candidate for this role.

For this project, I centered my efforts on Question 3 (Parts 1 and 2) and Question 1 (Part 1) to showcase my proficiency in Bayesian analysis, causal inference, probabilistic machine learning, and Monte Carlo methods. During the initial phase, I devoted two weeks to mastering testing protocols and the TensorFlow framework. While my academic background has primarily involved PyTorch, with limited prior exposure to formal testing methodologies, this challenge became an invaluable opportunity for professional growth. Over the subsequent 14 weeks, I methodically divided my efforts: six weeks for Question 3 (Part 1), followed by two four-week intervals to address Question 3 (Part 2) and Question 1 (Part 1). By replicating experiments from relevant literature and rigorously addressing project-specific hurdles, I ensured thorough documentation of my process. Though I possessed foundational knowledge in these areas, refining specialized skills demanded significant dedication. This experience has not only expanded my technical acumen but also reinforced my readiness to engage in cutting-edge AI and data science initiatives.

I am particularly inspired by J.P. Morgan's renowned innovative spirit and its commitment to leveraging advanced technologies to deliver exceptional client value. The prospect of contributing to the Machine Learning Center of Excellence in Hong Kong, with its pioneering work in AI and data science, aligns seamlessly with my aspirations.

I have attached this cover letter and the reports for the three project parts to this email for your review. You can also find detailed code implementations and demonstrations through the GitHub repository. Thank you for your time and consideration, and I would welcome the opportunity to discuss my submission further and am eager to contribute to the Machine Learning Center of Excellence. Please do not hesitate to reach out with any questions.

Thanks in advance!

**Shuo Hao**