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Dear Hiring Manager:

I am excited to submit my application for the Principle Data Science at Discover, and I got this information from your campus event. I am currently a second-year master student and majoring in econometrics & quantitative applied economics (STEM major) at the University of Wisconsin-Madison. I am confident that my relevant education, experience, and skills related to this position merit your consideration.

I have extensive knowledge of machine learning, quantitative analytics, statistics, as well as business management practices. Also, I have highly developed quantitative and modeling skills, such as predictive modeling, optimization modeling, and causal inferences. I am able to translate business problems into data analytics tasks and swiftly develop and deploy high-performance quantitative model-based solutions and give advice based on the analysis results. My machine learning and causal inferences thesis project is in the financial technology domain, and the goals are to predict whether or not the customers will accept the bank's direct marketing campaign offers, and identify its causal factor. The scope involved data cleansing, explanatory analysis, data visualizations, applying various machine learning methods to the dataset, model validations, and determine the model that best predict customers' responses. I used both statistical learning and machine learning methods, including logistic regression, classification & regression tree, random forest, and artificial neural network, and random forest method turned out to be the most accurate model in prediction. Besides, I explored its causal effect and helped the issuer to identify the key driver that affected customers' responses. The analysis was done using R and Python, while I am also capable of Stata and MySQL. Another predictive modeling project was in financial default domain and the goals were to predict the likelihood of customer credit card payment default and identify its deterministic factor. I applied logistic regression, linear discriminant analysis, quadratic discriminant analysis, and decision tree. The analysis was done in R, and I identified the best model for the credit card issuer to predict default, adjust its future strategy, and credit limits.

My professional experience includes a summer internship with China Institute of Land Prospecting and Planning, Ministry of Land and Resources of P.R.C., where I learned land policy evaluation in China's rural area for the first time. I assisted the prospecting engineers with the cost - benefit analysis and econometric model building to evaluate the effectiveness of rural land policy change that is in alignment with the goals of the national strategic project - *The Strategy of Rural Vitalization*. Also, I was responsible for background policy and international case researches, gathering data from survey results and databases, data mining, interpreting and presenting technical results for non-technical stakeholders, and writing summary reports.

I am fascinated by financial technology applications, especially applying machine learning methods to detect financial frauds, such as money laundering. I chose the machine learning applications in AML as my thesis topic, but had to give it up due to lacking real data. With my passion for the bank industry, financial technologies, and data analysis, as well as skills in quantitative analytics, quick learning, multi-tasking, and team-working, I am confident of excelling in my dreamful position ---Principle Data Science. A CV is enclosed that covers my experience and skills in greater detail. I would appreciate the opportunity to demonstrate my potentials in an interview.

Sincerely,