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RE: AlphaGrep Quantitative Trading Analyst Position
Dear AlphaGrepHiring Manager,

My name is Roger Lin and I am currently a candidate pursuing a Masters in Public Policy with a specialization in Finance and Policy at UChicago's Harris School of Public Policy. I am writing to express my strong interest in the AlphaGrep Quantitative Trading Analyst position. What drew me to this role specifically is AlphaGrep's unmatched reputation for investment excellence, its culture of ownership, its focus on personal and professional growth, and the chance to collaborate with and learn from the most brilliant investment team in the world. My academic background in finance, economics, and public policy, combined with relevant professional experience, I believe, makes me an ideal candidate for this position. I have long been fascinated by financial markets, especially their role in efficiently allocating risk between different market participants. This enduring curiosity has led me to seek out opportunities to deepen my knowledge of financial markets, the macroeconomic factors which influence them, and the key value drivers of an individual firm's returns. Through the MPP program's heavy quantitative focus, I have furthermore developed a solid foundation in mathematics and statistics, as well as strengthened my technical competencies in statistical analysis using Python, R and Stata, data-driven decision making, financial modeling, and research. Moreover, through my coursework at the Booth School of Business, I have had the opportunity to deepen my financial valuation and equity research skills using datasources such as CapitalIQ Pro, Visible Alpha, and Bloomberg Terminal to perform company valuations and make data-driven investment recommendations.

My coursework has provided me with hands-on experience in applying advanced quantitative techniques to real-world financial problems. In a fixed income asset pricing, I undertook a project that involved extracting real and nominal yield curves from bond market data. This required me to clean and process large datasets using Python, applying sophisticated statistical methods such as cubic spline interpolation and the Nelson-Siegel-Svensson model. I then leveraged these yield curves to price Treasury Inflation-Protected Securities (TIPS) and nominal Treasury securities, implementing complex pricing models in Python. The project culminated in designing sophisticated hedging strategies, where I utilized Monte Carlo simulations to stress-test the strategies under various interest rate scenarios. Building on this experience, in a Macro Finance course, I developed and tested a dynamic asset allocation strategy using historical data spanning from 2000 to 2024. This project showcased my proficiency in data manipulation and analysis using pandas and numpy libraries in Python. I applied Principal Component Analysis (PCA) to reduce the dimensionality of the dataset and determine the optimal asset allocation strategy across multiple asset classes. To evaluate the strategy's performance, I leveraged QSTrader, an open-source backtesting framework, where I implemented the strategy using object-oriented programming principles. This allowed me to simulate and assess the strategy's performance under various economic scenarios, incorporating transaction costs and slippage for a more realistic evaluation. Throughout both projects, I honed my skills in financial modeling, quantitative analysis, and programming, while also gaining practical experience in applying theoretical concepts to real-world financial challenges.

My professional journey has been instrumental in developing a sophisticated understanding of financial analysis, strategic planning, and data-driven decision-making. As a business analyst at Bainbridge Consulting, I spearheaded a transformative project for a local event management software startup. Our team conducted comprehensive market research to map out the competitive landscape, identified strategic market niches, and developed a long-term growth plan with measurable targets and performance indicators. Our commitment to the client extended beyond the project's completion; we continued to track their progress and provide strategic advice, embodying a sense of ownership and accountability for our recommendations. This experience not only sharpened my analytical and strategic thinking skills but also taught me the importance of thinking like an owner—an ethos that is a cornerstone of AlphaGrep's culture. My earlier experience helping run my family's small business had already instilled in me this invaluable perspective. This approach, grounded in a deep sense

of responsibility for outcomes and a commitment to continuous learning and improvement, has become a guiding principle in both my personal and professional life. It aligns perfectly with AlphaGrep's emphasis on ownership at all levels, which I believe is a crucial factor driving the firm's continued success in a highly competitive industry.

This past summer I had an opportunity to apply my knowledge of financial markets and quantitative skillset in a real-world context as a research assistant at UChicago's Becker Friedman Institute, where I studied the link between inflation and returns on various asset classes, and in particular, the historical correlation between equity and bond excess returns under different inflation regimes. My responsibilities entailed performing literature review, compiling and cleaning datasets, performing econometric analysis and interpreting the results, and drafting memos highlighting the main findings of the study for an academic and public policy audience. This experience was particularly gratifying in allowing me to apply theories learned in the classroom to the real world and to study empirically how macroeconomic trends affected investment returns. At AlphaGrep, I hope to continue my exploration of financial markets in the real world, and to test and refine my theories in the meritocracy of the market. My curiosity and eagerness to take on new challenges will be invaluable assets in this role. I look forward to discussing my qualifications further.

Best regards,
Roger Lin