

## Cover Letter

# Taha Shaikh

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KKI Capital Quantitative/Data  
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I am a third-year computer engineering student at Virginia Tech applying for the Quantitative/Data Analyst Internship. I was drawn to this role by its usage of cutting-edge technologies in quantitative research. I strongly believe in technologies such as machine learning, artificial intelligence, and blockchain and am interested in discovering their applications in fields outside of computer science and math. I am excited to combine quantitative analysis and financial modeling with techniques traditionally embedded within higher-level math and statistics.

I am currently double majoring in machine learning and applied computational mathematics and have always enjoyed finding stories and narratives in large datasets. My sophomore year capstone project with the Calhoun Discovery Program at Virginia Tech dealt with identifying the best machine learning models for predicting Bitcoin trends using C++ and Wolfram Mathematica; I really enjoyed the process of updating my model and comparing with real-world, real-time data to optimize a portfolio. I decided on using a gradient-boosted trees model which proved successful, and a few members of my cohort actually asked me to invest on their behalf. This project reinforced my knowledge of mathematical modeling and taught me more about algorithmic trading. During the beginning of the pandemic, I attempted to use a Gaussian process model to predict how COVID-19 cases in the US would change by August 2020. The model I created was comically incorrect but led me to doing more research about how actual epidemiological models work; I really enjoyed reading about how statistics and math can be used in conjunction with biology to predict how diseases spread across a population. My contribution to KKI's student programs would be in this capacity: making predictions, identifying trends, and forecasting data using math modeling, statistics, and technical analyses.

Between my engineering and programming classes, I make it a point each week to attend economics lectures and talks from professionals in the finance industry. I believe that learning as much as you can about fields outside your primary major can give you a better perspective about complex problems and help you find the best, most equitable solution.

Ultimately, I see working with KKI as an opportunity where I can better myself through developing a richer understanding of data science and deep learning as well as crucial soft skills such as technical writing, public speaking, and professional networking. I am excited to learn more about financial engineering and artificial intelligence and find a niche where my interests in data visualization, math modeling, and machine learning align with KKI's mission. Thank you for your time and I look forward to hearing back from you.

Sincerely, Taha Shaikh