

## Assignment 4:2 - Application Package

Daniel Kim



## Quantitative Analyst, Derivatives

Locations: Toronto, Canada

Categories: Analytics

Req ID: 281502

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### Job Description

**The Role:** Quantitative Analyst, Derivative

**The Team:** The Quantitative Analytics Group (QAG) is a global team of experienced quantitative analysts who support several related derivatives valuation and data businesses within S&P Global Market Intelligence. The team is a dynamic and collaborative group who take on a broad range of financial engineering and statistical inference problems, always emphasizing the relationship between the theoretical and practical aspects to leverage our diverse data sources and provide best in class business solutions.

**The Impact:** QAG is currently seeking an individual with a strong quantitative background and a passion for financial markets to support the growth of our Over-the-Counter Derivatives Data (OTCDD) business. The successful candidate will help to expand coverage and improve quality of the process, with focus on the creation of quality data sets using sparsely observed market data.

#### What's in it for you:

- Be part of a global team including a strong group of experienced subject matter experts in Toronto.
- Gain understanding of industry trends and the relationship between theoretical work and business outcomes.

- Exposure to a broad range of problems combining financial pricing models and statistical inference across derivative asset classes.

**Responsibilities:**

- Analysis of financial data sets and contribution to design of new products through creation of proofs of concept.
- Implementation of product specifications into production workflow, primarily through coding in Java.
- Work with operations and product management teams to act as an escalation point for client queries and troubleshooting on existing products.
- Designing, implementing, and testing methodology improvements where necessary

**What We're Looking For:**

- Undergraduate degree in quantitative discipline (Mathematics, Physics, Engineering). Graduate level degree, particularly in financial engineering, is an asset but not a requirement.
- Proficiency and experience in Java, C++ or other object-oriented programming language; Python experience also an asset.
- 1-2 years' experience working in financial engineering an asset.
- Passionate interest in theoretical and practical aspects of financial engineering, particularly in relation to financial derivatives
- Open communicator and team player who values diverse skills and approaches to questions and can communicate the essence of technical concepts to non-technical people.
- Creative and tenacious problem solver

**Flexible Working (optional)**

We pride ourselves on our agility and diversity, and we welcome requests to work flexibly. For most roles, flexible hours and/or an element of remote working are usually possible. Please talk to us at interview about the type of arrangement that is best for you. We will always try to be adaptable wherever we can.

**Return to Work**

Have you taken time out for caring responsibilities and are now looking to return to work? As part of our Return to Work initiative (link to career site page when available), we are encouraging enthusiastic and talented returners to apply, and will actively support your return to the workplace.

**Grade/Level** (*relevant for internal applicants only*): 9

**The Location:** Toronto, Canada (Hybrid 1-2 days in office)

**About Company Statement:**

**S&P Global delivers essential intelligence that powers decision making.** We provide the world's leading organizations with the right data, connected technologies and expertise they need to move ahead. As part of our team, you'll help solve complex challenges that equip businesses, governments and individuals with the knowledge to adapt to a changing economic landscape.

**S&P Global Market Intelligence** partners with customers to broaden their perspective and operate with confidence by bringing them leading data sources and technologies that embed insight in their daily work.

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**Equal Opportunity Employer**

S&P Global is an equal opportunity employer and all qualified candidates will receive consideration for employment without regard to race/ethnicity, color, religion, sex, sexual orientation, gender identity, national origin, age, disability, marital status, military veteran status, unemployment status, or any other status protected by law. Only electronic job submissions will be considered for employment.

If you need an accommodation during the application process due to a disability, please send an email to: [EEO.Compliance@spglobal.com](mailto:EEO.Compliance@spglobal.com) and your request will be forwarded to the appropriate person.

**US Candidates Only:** The EEO is the Law Poster

<http://www.dol.gov/ofccp/regs/compliance/posters/pdf/eeopost.pdf> describes discrimination protections under federal law.

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20 - Professional (EEO-2 Job Categories-United States of America), ANLYTC202.1 - Middle Professional Tier I (EEO Job Group)

**Job ID:** 281502

**Posted On:** 2023-04-06

**Location:** Toronto, Ontario, Canada

Job Link

[https://careers.spglobal.com/jobs/281502?lang=en-us&utm\\_source=linkedin](https://careers.spglobal.com/jobs/281502?lang=en-us&utm_source=linkedin)

Works Cited

“Quantitative Analyst, Derivatives.” S&P Global,  
[https://careers.spglobal.com/jobs/281502?lang=en-us&utm\\_source=linkedin](https://careers.spglobal.com/jobs/281502?lang=en-us&utm_source=linkedin)

April 16<sup>th</sup>, 2023

S&P Global  
22 Adelaide St W, Toronto  
Toronto, Ontario

Dear Hiring Manager,

Re: Quantitative Analyst, Derivatives

S&P's reputation as one of the most respected and fastest growing institutional investors on a global scale excited me to apply for the Quantitative Analyst, Derivatives position. My deep interest in computing and finance has driven me to research ways to improve stock evaluation models, such as the Gordon Growth Model and Discounted Cash Flow through Python's machine learning packages. The fast-paced and intellectually challenging environment within S&P Global motivates me to actively improve my skillsets in computing and continuously learn the applications of investing so that I can bring a diverse perspective to S&P Global.

I am the type of person that doesn't stop until I become competent in a particular skill set and produce scalable returns. As a Data Research Analyst Intern for CKM Sports Management, I spend over 100 hours practicing Python libraries such as Matplotlib to organize my results graphically, NumPy to support large-scale arrays, and Pandas to conduct regressions. My investment has led me to discover ten new statistical relationships that directly assisted in creating new training regimes for CKM clients. My impact on the athletes demonstrated the power of computing and the difference I can make on a larger scale. As a result, I decided to pursue computer science to hone my computing skills and knowledge to equip myself with the necessary tools to better society. Thus far, with the computer science knowledge I obtained this past school term, I built a speech-to-text application using Twilio's API and React that allows individuals with hearing impairment to see what is said to them through an application. This application led to a top 5 placement in StormHacks' Hackathon.

During my time at CKM and with UBC's Analytics Department, I have also learned how to communicate effectively, as one of my main tasks was to communicate my regressions and statistically significant results to the Analytics Head Coordinator. With my constant communication, my role grew where I regularly collaborated in meetings and got a more substantial say in implementing the results into game-day strategies for the Varsity Team and draft strategies for CKM.

Without a doubt, my financial background is still limited. However, my software skills, passion for finance, dedication to learning, ambition, and ability to thrive in a fast-paced environment will allow me to succeed as a Quantitative Analyst, Derivatives for S&P Global. I would love to get an opportunity to discuss the skills I will bring to the job in more depth.

I can be contacted through my email at [dkim98@student.ubc.ca](mailto:dkim98@student.ubc.ca).

Sincerely,

Daniel Kim

# Daniel Kim

danielkim15@hotmail.com | (236) 863-3744 | <https://github.com/dkim3300>

## TECHNICAL SKILLS

**Programming Languages:** Java, Python, R, C++, C, Stata, HTML, CSS, Microsoft Excel

**Tools & Technologies:** IntelliJ, Git, React, Pandas, NumPy, Matplotlib, JUnit, Dplyr, Tidyverse, GeoPandas, Anaconda, Pytest

## PROJECTS

**GM Trade Simulator** **Java** **Jan 2022 – April 2022**

- Created a player trade simulator in Java with user-handling buttons that execute trades, create and edit players, update rosters, and display player attributes with picture components
- Designed a JFrame GUI with Swing to create an interaction between the user and application
- Performed Test Driven Development using JUnit and persisted game state in JSON to allow for saving and loading

**Hearo Speech-To-Text Application** **React, HTML, CSS** **Feb 2022 – Mar 2022**

- Designed and implemented a web application that displays text and buttons to start the application
- Built the front-end of the application using React with HTML and CSS
- Collaborated with team members on the implementation of Twilio’s speech-to-text API to back-end
- Top 5 placement with over 250 participants in StormHacks Hackathon

**Stock Price Evaluator** **Python** **Feb 2021 – Present**

- Performed statistical analyses in Python on 100+ observations of stock prices with NumPy to handle large-scale arrays, Pandas DataFrame to read historical CSV files, and Pandas’ Statsmodels to run regressions
- Generated graphical visualizations of findings with Matplotlib

**Applied Economics Capstone Thesis** **R, Stata** **Jan 2020 – April 2020**

- Completed a senior thesis analyzing the depths of the NHL Draft with the Heckman Selection Model
- Assembled, wrangled, and merged over 15 data sets into one master dataset with Tidyverse, Dplyr, Ggplot2, and Stata
- Selected as one of the top 3 senior research papers in an Economics graduating class of over 250 students

## WORK EXPERIENCE

**Research & Development Engineering Trainee — *Communications Research Centre*** **Sept 2022 – Dec 2022**

- Constructed software algorithms that supported multi-layered datasets using Anaconda, GeoPandas, and Numpy
- Built testing frameworks to ensure correctness in code with Pytest

**Data Research Analyst Co-op — *CKM Sports Management*** **Jan 2020 – April 2020**

- Developed over 20 research questions on ways to improve efficacy in player draft predictions through hypothesis testing
- Discovered over 10 new statistical relationships that directly helped catalyze 4 new training regimes for CKM athletes

**Data Analyst & Statistician — *UBC Varsity Analytics*** **Sept 2018 – Sept 2021**

- Compiled over 60 advanced data across major junior leagues into statistical models to formulate relationships in Python
- Improved the team’s wins’ percentage by 10% annually by integrating statistical analyses into game-day strategies

**Logistics & Operations Intern — *UBC Athletics*** **Aug 2018 – Sept 2019**

- Trained over 15 additional incoming staff members in equipment deliveries, inventory control, and budgeting
- Regularly conducted inventory control for over 100 essential equipment and materials

## EDUCATION

**Bachelor of Computer Science, 3<sup>rd</sup> Year — *University of British Columbia, Vancouver*** **Exp. Graduation April 2024**

**Bachelor of Arts, Economics with High Distinction — *University of British Columbia, Vancouver*** **Class of 2021**

## ADDITIONAL INFORMATION

- **Awards:** Trek Excellence Scholar 2020 & 2021 (gpa in top 5%, awarded \$1,150); Perry Bar Hall Scholar 2021 (awarded \$1,150)
- **Affiliations:** UBC Finance Club; UBC Stock Trading Group; BCS Student Association Executive

April 16<sup>th</sup>, 2023

To: Derek Ryan (Derek.Ryan@ised-isde.gc.ca)  
From: Daniel Kim (dkim98@student.ubc.ca)  
Date: April 16<sup>th</sup>, 2023  
Subject: Request For Reference

Dear Derek Ryan,

I hope you are well since we last spoke.

Since working together for the Communications Research Centre Canada, we had numerous discussions during our breaks, talking about our passions and dreams. Over the past few weeks, I have been reflecting on our conversations and found myself impassioned to pursue them.

I recently came across a job posting that directly reflects the job I have been wanting. With this in mind, I am sending this email, hoping you would be comfortable writing me a letter of reference.

Working under your wing, as my Supervisor, I have gained invaluable skills in all aspects that will make me a great candidate for this new opportunity. To ensure I continue to grow and work on my weaknesses, I actively emulate the key characteristics of being persistent, patient, and driven everyday. It is my hope that I can bring my experience from working with you into S&P Global where I will be working on Financial Derivatives, using software development. As an experienced Supervisor, your reference would be an excellent addition to my application.

If you are comfortable with providing a reference letter to me, please let me know by April 17<sup>th</sup>, 2023, as I will need to have my references ready by then. If you have any further questions or comments, please do not hesitate to contact me at [dkim98@student.ubc.ca](mailto:dkim98@student.ubc.ca).

Thank you for your time and consideration.

Sincerely,

Daniel Kim



April 16<sup>th</sup>, 2023

To: Michael Porter (MichaelPorter@gmail.com)  
From: Daniel Kim (dkim98@student.ubc.ca)  
Date: April 16<sup>th</sup>, 2023  
Subject: Request For Reference

Dear Michael Porter,

I hope you are well since we last spoke.

Since working together for CKM Sports Management, we had numerous discussions during our breaks, talking about our passions and dreams. Over the past few weeks, I have been reflecting on our conversations and found myself impassioned to pursue them.

I recently came across a job posting that directly reflects the job I have been wanting. With this in mind, I am sending this email, hoping you would be comfortable writing me a letter of reference.

Working under your wing, as my Supervisor, I have gained invaluable skills in all aspects that will make me a great candidate for this new opportunity. To ensure I continue to grow and work on my weaknesses, I actively emulate the key characteristics of being persistent, patient, and driven everyday. It is my hope that I can bring my experience from working with you into S&P Global where I will be working on Financial Derivatives, using software development. As an experienced Supervisor, your reference would be an excellent addition to my application.

If you are comfortable with providing a reference letter to me, please let me know by April 17<sup>th</sup>, 2023, as I will need to have my references ready by then. If you have any further questions or comments, please do not hesitate to contact me at [dkim98@student.ubc.ca](mailto:dkim98@student.ubc.ca).

Thank you for your time and consideration.

Sincerely,

Daniel Kim

April 16<sup>th</sup>, 2023

To: Jonathan Bloom (Jonathan.Bloom@ised-isde.gc.ca)  
From: Daniel Kim (dkim98@student.ubc.ca)  
Date: April 16<sup>th</sup>, 2023  
Subject: Request For Reference

Dear Jonathan Bloom,

I hope you are well since we last spoke.

Since working together for the Communications Research Centre Canada, we had numerous discussions during our breaks, talking about our passions and dreams. Over the past few weeks, I have been reflecting on our conversations and found myself impassioned to pursue them.

I recently came across a job posting that directly reflects the job I have been wanting. With this in mind, I am sending this email, hoping you would be comfortable writing me a letter of reference.

Working under your wing, as my Technical Lead, I have gained invaluable skills in all aspects that will make me a great candidate for this new opportunity. To ensure I continue to grow and work on my weaknesses, I actively emulate the key characteristics of being persistent, patient, and driven everyday. It is my hope that I can bring my experience from working with you into S&P Global where I will be working on Financial Derivatives, using software development. As an experienced Technical Lead, your reference would be an excellent addition to my application.

If you are comfortable with providing a reference letter to me, please let me know by April 17<sup>th</sup>, 2023, as I will need to have my references ready by then. If you have any further questions or comments, please do not hesitate to contact me at [dkim98@student.ubc.ca](mailto:dkim98@student.ubc.ca).

Thank you for your time and consideration.

Sincerely,

Daniel Kim