

# JP Morgan ALM R&S Internship Qualitative Assignment

Ruoyu Lin

To be delivered Nov. 21 2022

## 1 Why ALM R&S?

As the asset & liability management wing of one of the world's most prominent banks, JPM's ALM R&S adapts cutting-edge technology into sustainable, long-term investments. For me, who aspire to build automated tools for sustainable investment infrastructure since the second year of undergraduate studies, this is an optimal choice.

Joining of MS Financial Engineering at Columbia from my undergraduate mathematics background was one of the best choices I've made in recent years. This shift from a building solid mathematical foundation to viewing how quantitative methods work in financial practice pulls me closer to quantitative research closer than ever. For example, my first semester lectures covered a significant portion of materials on pricing bonds, annuities, and swaps. These additions to my knowledge would facilitate my adaption to projects at ALM R&S.

From another angle, my recent year's focus on programming and software engineering on top of my consistent passion for quantitative modeling enabled me to write organized, maintainable code with high re-usability. This inclination ably aided me to transition from a student in mathematics to someone who can efficiently employ his knowledge in an industrial setting.

Retrospectively with respect to both my background and experience, I wholeheartedly deem now the best time in my personal path to join JP Morgan ALM R&S team. Because of its prestige in finance, extensive network, and diversity, I think of JPM ALM R&S as an excellent touchstone – it would grant me just enough challenge to progress personally, and I as well am confident to give back to the company via my excellent work ethic and professionalism.

## 2 Not Known from Resume

On top of the materials I provided in my resume, I would like to add my experience with note-taking which demonstrates my organizational skills and my essence as an engineer.

L<sup>A</sup>T<sub>E</sub>X is a mathematical typeset language invented by Leslie Lamport in the 1980s<sup>1</sup>. It is especially popular in the STEM fields for its capacity to display equations in a presentable fashion, and is precisely what enabled me to write this document. I have been a steadfast user of L<sup>A</sup>T<sub>E</sub>X since my first year undergraduate, so much so that I use it to typeset notes in real-time for every mathematical lecture I have ever participated in. Though discouraged many times by different professors due to their disbelief in the efficiency of my ways, I continued this practice throughout my undergraduate studies, and eventually was able to deliver a set of compiled .pdf lecture notes to a professor, aiding his future classes' planning.

This continued practice not only made me the very best note-taker I know of but as well cultivated the habit of organizing all of my data throughout the years. For instance, whenever I encounter a technical concept in my studies, I can retrieve the relevant material in less than a minute from my compiled notes on cloud; I have as well documented all my relevant code files in a similar fashion, making their re-use and showcase accessible; what's more, most recently I have devised Python scripts that automatically compile and combine my notes so that I can use these organized materials to help a disabled Financial Engineering student absent from classes through Columbia Disability Services.

I deem it fit to share this part of my life with you because I think it would convince you that the same level of organization and management skills will be facilitating my projects during the ALM R&S internship; furthermore, I sincerely hope that I have the luck to aid someone in need via this skill set, as I am doing it now.

### 3 Multi-tasking Under Challenging Timelines

My most recent challenge with time constraints occurred in the Fall of 2021, just before my undergraduate graduation. At the time, I faced various tasks at the same time: first of all, I had a dozen financial engineering graduate applications to prepare, all of which had deadlines before Jan 2022; in addition, for one of my dream programs, UC Berkeley Haas MFE, I had to complete a 5-month online Machine Learning Nanodegree, and two other MOOC courses, and follow Haas MFE's own preparation boot camp, all before Jan 2022; and finally, I had the personal goal of graduating my undergraduate studies Summa Cum Laude in Dec 2021, so I as well needed to be the mind of my coursework in my last semester, which includes a Ph.D. level economics elective.

Imposed on me was a classic prioritization problem, as the combination of these tasks obviously overwhelmed my schedule. However, never having believed in the so-called "impossible task", I decided to engage all of them at once. At school, I utilized the time window between lectures to tend to my undergraduate assignments; when I had a zoom lecture, I played the ML Nanodegree lectures in the background to review concepts useful for the final project; I squeezed time from my sleeping and eating schedule to accelerate the progress on my ML Nanodegree final project. Throughout the semester, I did not miss a single lecture or assignment at school and graduated Summa Cum Laude, finished the 5-months duration of

---

<sup>1</sup><https://www.latex-project.org>

Nanodegree in 2 months, and got into two of my dream programs – Columbia Engineering and UCB Haas. It was truly a painful experience, but no one has ever progressed within one's comfort zone.

Viewing this journey in retrospect, my personal progress was evident and encouraging. However, from my perspective now, maybe the personal goal of graduating Summa Cum Laude seems more of an obsession with the appearance of excellence, rather than a tangible benefit for personal growth. Perhaps, reasonably sacrificing some GPA for self-care and mental health during critical times in life seems more fitting, and I will continue to work on my prioritization skills in times of challenging timelines.