To Whom It May Concern,

I am a master's student in economics at the University of Texas at Austin and am expected to graduate in May 2022. I would like to apply for the RA position I found on your website. I will discuss my **research experience**, **skill sets**, and **motivation** for your evaluation of my competency for the position. Besides, **additional materials** (including a writing sample, sample codes, and a paper list) are attached to demonstrate my experience and potential.

Selected Research Experience: I have experience in macroeconomics, international economics, and applied finance, including both theoretical and empirical work.

(1) As for **macroeconomics**, I worked as a RA at the University of Manitoba (in Canada) for Prof. Carlos Yepez, whose project is 'International capital flows in emerging economies'. My main work includes replicating DSGE models with MATLAB (Dynare) and conducting empirical work to match the moments from data and models with Stata. This experience gets me access to cutting-edge macroeconomics research and enables me to finish most of the technical work for DSGE modeling and matching independently.

(2) As for **international economics**, I am collaborating with Prof. Haitao Mao in Zhongnan University of Economics and Law (in China) and Prof. Dao-Zhi Zeng in Tohoku University (in Japan) to coauthor a paper (included as my writing sample). This paper connects indirectly additive preferences with international trade and endogenous growth and thus presents a new channel by which trade liberalization can affect welfare. I've used Mathematica for the simulation in this paper and LaTeX to write the manuscript. This experience gets me involved in every stage of theoretical research in economics and makes me an independent researcher in trade theory beyond pure students.

(3) Lastly, I worked as a research intern in a hedge fund in China. I focused on **applied finance** topics, including stock factors, dynamic option hedging, and neural networks predicting stock prices, and took data analysis work with Jupyter-Lab-based Python. This internship gets me access to doing data work on the dataset of GB size (especially the high-frequency financial data) with methods from time series analysis and deep learning, which improves my skills for computer programming and statistical analysis.

Skill Sets: I understand that besides knowledge of economics, becoming an economist requires a wide range of skills. I always pay great attention to developing my skills in mathematics, computer science, and communication.

(1) I learned most of the **software packages and programming languages** that I've worked with on serious economic research or work in practice or by self-teaching with tutorials; besides, I gained experience in Mplus, SPSS, Eviews via course projects, undergraduate research initiatives, and competitions. Also, I am receiving training in Stata and R from my graduate classes. I use Zotero and Markdown to manage literature and make notes as well.

(2) To lay the mathematical foundation for economic research, I've taken a series of **math courses**: multivariate calculus, probability and statistics, linear algebra, differential equations, stochastic process, real analysis, optimization. Note that I regard math as the tool for economics and thus do not put in all of my time to pursue perfect grades; alternatively, I spend much time on seminars, academic projects, and research papers at the same time. I am also very comfortable with math in my graduate-level courses and research.

(3) As for **general** skills, I am consistently recognized as an excellent speaker by my audiences. For scholarly communication, I love teaching others and often help the study group review the course materials, and my presentation in class often receives praises from professors. Also, I am always the head of study groups and undergraduate projects and thus get used to multitasking.

Motivation: Considering my experience covering theoretical modeling, simulations, data analysis, and prediction with time series, **causal inference** has been the remaining topic of my interest in economics that I have yet to dive into before (though I have audited and will attend courses covering this topic). Thus, getting access to the cutting-edge empirical work is extremely valuable to me for establishing a comprehensive background in economic research experience, especially given the fact that I am used to learning by doing. Moreover, it is **inequality** that is the topic that interests me most, and one of the starting points for me is the research about dynamic individual trade welfare, which requires knowledge about **calibration (or structural estimation), labor markets, and dynamic modeling** that I expect to learn during the internship. Finally, I am eager to devote myself to an **academic career** and will seek a position in research institutions. Therefore, the predoctoral experience from top research institutions with top researchers matters a lot to me.

Two more things to mention are 1) that my available start time is **early May 2022** after graduating from my MA program in economics at UT Austin and 2) that STEM-OPT from the program would enable me to get a **three-year work authorization**. Thank you for your time and consideration. I look forward to speaking with you soon!

Sincerely,

Jipeng Cheng