Ayush Pradhan

As a passionate advocate for evidence-based policymaking and a fervent believer in the power of data to drive societal change I developed an appreciation for the role of economic principles in shaping public policy during my undergraduate studies in Financial and Business Economics through modules such as Applied Economics and Policy, International Economic Policy, and Industrial Growth and Competition. However, it became increasingly evident to me that traditional economic analyses often fall short in capturing the complexity of real-world problems. This realisation ignited my interest in data science as a powerful tool to enhance our understanding of socio-economic phenomena to inform more effective policy interventions. As an aspiring professional seeking to delve deeper into this multidisciplinary field, I am keenly drawn to the Data Science and Public Policy programme at UCL and I am eager to equip myself with the necessary skills and knowledge to become proficient in this field.

During my undergraduate study in the Quantitative Methods modules, I developed a sound understanding in calculus with respect to concavity, directional derivatives, and nonlinear programming and their importance in solving multifaceted optimisation problems with resource constraints. Furthermore, I have covered matrix algebra with practical applications to real world problems that concern different sectors of the economy in aggregate through input-output analysis. Learning about these quantitative economic theories and how they translate into real-world scenarios laid the groundwork for my interest in policy analysis. Moreover, the realisation of the transformative potential of data-driven decision-making in driving socio-economic progress along with a newfound understanding of the complexity of modern-day problems that policy makers face, I now seek to deepen my analytical toolkit which is why I believe I would thrive and greatly benefit from an academically rigorous environment provided at UCL.

The prospect of gaining intensive training in applied data science methods, statistics, and machine learning, coupled with specialised modules in economics, aligns seamlessly with my academic aspirations and professional interests. UCL's MSc programme stands out with regards to equipping future policymakers with the analytical tools necessary to navigate the complexities of contemporary problems effectively. The emphasis on practical applications, as exemplified by modules such as Machine Learning and Statistical Programming for Social Data Science, resonates with my eagerness to utilise cutting-edge methodologies in addressing societal challenges.

Moreover, the opportunity to engage with leading academics and experts in the field during my studies is invaluable. The prospect of collaborating with faculty members with steep expertise in the field is both inspiring and enriching. Through lectures, seminars, and lab sessions, I anticipate honing not only my analytical skills but also my ability to think critically and communicate complex ideas effectively such that data analysis findings can be understood by those without technical knowledge of the subject area.

One of the optional modules that particularly intrigues me is Health Economics. As someone deeply interested in the intersection of economics and public health, I see this module as an opportunity to delve into key concepts and methods in health economics, further enhancing my understanding of how economic principles inform healthcare policies. Given the increasing importance of evidence-based healthcare decision-making, the need for improved cost-effectiveness analysis, and economic evaluation of advancements in health technologies driven by AI, I am eager to explore this rapidly changing field and its implications for public policy formulation.

With regards to course specific programming skills, both inside an academic setting and outside through the Google Data Analytics Professional Certificate and Harvard's CS50 Introduction to programming with Python course, I have supplemented my economic understanding of quantitative methods with invaluable practical experiences. My completion of the Google Data Analytics Professional Certificate has equipped me with hands-on experience in data aggregation, cleaning, and visualisation, using SQL. Furthermore, I have used statistical packages in R such as ggplot2 in tidyverse and discovered the ggplot() function coupled with geom, facet, and annotate functions allowed for seamless visualisations to identify trends via scatterplots, bar charts, and trendlines for imported datasets. Along with use of excel functions in spreadsheets whilst analysing large swathes of opening and closing prices of various stock market indexes such as the SEMDEX, Tadawul, and FTSE 100 to test for the presence of a day of the week effect or monthly effect on stock returns, using excel proved to be an effective and relatively straightforward tool to consolidate average returns for each day of the week and months of the year separately for multiple years of data entries.

Looking ahead, I envision leveraging the knowledge and skills gained through UCL's MSc programme to make meaningful contributions to evidence-informed policymaking. Whether in the public sector, international institutions, or the private sector, I am committed to applying data science methodologies to address pressing societal issues and drive positive change. With a firm grounding in economic theory and a proficiency in data analysis techniques, I am eager to embark on this transformative journey at UCL, where I aim to not only expand my academic horizons but also contribute to shaping a more equitable and prosperous future through informed policy interventions.