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"This data is key in detecting down-syndrome early enough to terminate pregnancy" my manager explained on the first day at my recent internship. As someone who was misdiagnosed with down-syndrome, issues like these drove my desire to improve technological shortcomings through data. I chose data science because my strengths lie in the harmonious intersection of computer science, creativity, and their applications to real world problems like preventing a misdiagnosis. Ultimately, I am applying to UCLA's MEng DS/AI program because the curriculum, research opportunities, and emphasis on innovation and leadership align with my past experiences and career goal to become an industry leader in applying data science towards improving healthcare, biotechnology, and other domains.

Beyond my coursework, I aimed to apply my knowledge to real world problems. During my first internship at Chan Zuckerberg Biohub, I developed a database querying and visualization tool to help researchers identify significant genes which contribute to virus transmission. Consequently, my contributions helped researchers better understand how dangerous viruses infect humans. Building upon this, in my most recent internship at Bio-Rad, I protected the integrity of a limited amount of maternal data, ensuring that False Positives/Negatives for down-syndrome and other conditions were properly maintained. Properly recording these misclassifications was vital because each data point was also an affected family. A single mistake equated to potentially terminating a healthy pregnancy and vice versa. Having completed my internship, my impact will be folds greater when my work eventually culminates in a working aneuploidy test for future mothers and families across the world, further reinforcing my initiative of impactful data science. Reflecting on this perspective, I used my technical skills to best prevent misdiagnosis similar to mine, and plan to utilize graduate school to apply myself to similar problems.

Relatably, UCLA's culture of innovation perfectly aligns with my engineering experience in data science for healthcare/biotechnology. My current research experience also aligns with this culture; I was guided by Professor Zaslavsky where I designed a regression model and metric to fairly score regions on how equitable public transit infrastructure is. Additionally, for my senior capstone, I am involved in Professor Hu's group centered around LLM reasoning to continue my initiative to make ML/AI more reliable. My future research interests are increasing accessibility, reliability, and equity in healthcare ML/AI. UCLA captivates me because there are many labs working on problems that resonate with my misdiagnosis. Having access to these opportunities is important because they align with my career goal.

A masters in the field is an intermediate goal, and will allow me to mature and learn as I take courses at the cusp of innovation and am exposed to research opportunities that will allow me to continue my initiative sparked by my misdiagnosis. Reflecting on my contributions to virus transmission research, prenatal down-syndrome tests, and my future career goals, I am thrilled to pursue a graduate education at UCLA to continue growing as a student, data scientist, and leader as I transition to industry.