What I've been doing since my application

> Submit a brief statement that tells us what you have been doing professionally or academically since you last applied. This should be uploaded to the "Additional Materials" section of the application.

First half of 2020 (Jan–Jun)

I dedicated the first half of 2020 to studying for my finals. In Oxford, there isn't anything like a GPA: you take one set of final exams after three years, and those exams entirely determine your grades. So they are quite high-stakes and we study very hard for them. I submitted both my undergraduate theses (politics and economics) in April and took my final exams from May to June. I'm pleased to say I did very well: I won the Gibbs Prize for the best undergraduate political science thesis, got the highest score in the year (out of ~400 candidates) for the Political Sociology module, and placed 5th in the year (out of 259 PPE candidates) overall.

Summer 2020 (Jun–Sep)

During my summer break, I pursued two projects. I did the Google Summer of Code (GSoC) program with the Metric Geometry Gerrymandering Group (MGGG). I implemented a new feature in MGGG's flagship webapp Districtr. Districtr is a webapp that allows users to draw their own Congressional districts; I built a feature that let users see in real time how their districts compared to others.

I also did a data science consulting stint with an insurance tech startup. I built an end-to-end parallel processing pipeline. The startup monitors hundreds of driving trips a second and they wanted to do machine learning on the trips in real time. But this was too much for their systems to handle so I built the parallel processing pipeline for them which allowed them to increase their thoroughput greatly. I also performed clustering on their saved trips to detect anomalous trips (e.g. plane/ship/bus trips instead of car trips).

Fall 2020

Because I didn't go to Harvard this year, I chose to serve my bond with the Singapore government in the meantime. I am now a software engineer building out the government's AI arm. My team works on autonomous robotic fleets; we are deploying robotic fleets in complex environments like hospitals (ferrying medication and equipment around, freeing up medical staff) and shopping malls (delivering goods from the loading bay to the shopfronts). I currently architect and build the infrastructure needed for these robots to transmit and receive key

data (e.g. obstacle detection, calling lifts) from a central command-and-control server.

I am currently writing two working papers in computational political science, aiming to publish them in top polisci journals. I am very fortunate to be working with Moon Duchin and Thomas Weighill from MGGG, and co-authoring with Professors Jonathan Rodden and Nick Eubank, all of whom are eminent researchers in this space. Briefly, these papers are about how best to draw US Congressional districts. We show that drawing districts that minimise travel time between voters preserves communities of interest and prevents gerrymandering. I am excited to work on these papers as they have the potential to increase democratic representation and accountability in the US.

In my spare time, I am continuing my self-study in computer science and machine learning. I really like Stanford's courses, so I have been working through Stanford's CS140e with a group of friends where we build an operating system from scratch on the Raspberry Pi. After CS140e I plan to switch gears and complete CS231n (on convolutional NNs for computer vision) and CS228 (on probabilistic graphical models).

Over the next few months I will be moving to an experimental engineering team where I will be a software engineer building whole-of-government systems. The division specialises in building and shipping products at very high velocity, and has a culture much unlike the rest of the public service; I am excited to be starting there.