Priya Statement of Purpose

During my seventh semester of engineering, I took my second course in Cyber-Security - Information Security. Coincidentally, the Cambridge Analytica documentary on data and human rights, The Great Hack, released at the same time. I was flabbergasted by how elections were won and world politics influenced from a single insecure data point. The documentary connected textbook knowledge to real-life scenarios. Working on Personal Identifiable Information (PII)-dependent integrations in GE Healthcare made me hyper aware of GDPR and HIPPA laws. The crucial nature of this field cemented my decision to work in the cyber-security world. With more software applications moving into the cloud space and Big Data playing a major role, there is an increased need for security. I want to build more secure systems and be at the forefront of this revolution as we tread into ever changing waters. The flexibility of the MSc Computer Science (Negotiated Learning) course at University College Dublin (UCD) provides me with the ideal platform to create a carefully chosen combination of modules to achieve this.

From a young age, I have always loved working with computers. The intricacies of the Java language, combined with classroom projects, helped establish a strong foundation and piqued my interest in the subject. I eventually scored a full grade in my high school Computer Science class. I enjoyed solving simple switch-case and looping problems oblivious to the role computers play in the real world. My bubble burst when I pursued my Bachelor's in Computer Science and Engineering from PES University (PESU). I worked on real-world projects and areas that were close to my heart, namely security and data analytics. Over the course of my degree, I made calculated decisions and chose courses that catered to these areas, maximising the use of my Computer Science degree.

The various classes I took, during my time in college, resulted in me publishing a handful of academic papers. A paper on high plagiarism in unproctored internet testing with Dr Viraj Kumar opened my eyes to how insecure intellectual property can be. Working with Mr N S Kumar, MSc; I published two papers. PESU has implemented the first as a finished solution. The tool facilitates grading of answer sheets for university professors using Computer Vision toolkits like OpenCV and OMR. I have always wondered about the security flaws that could be exploited with image recognition. As part of my undergraduate thesis, I worked with Dr Shreekanth M Prabhu on finding interrelationships between Indian languages. I worked on this paper long past my under graduation and it won the Best Paper Award at the Congress on Intelligent Systems 2021 conference. Accolades aside, working on native Indian languages gave me a deeper appreciation of my own roots.

Being placed in the top 10 out of a cohort of 50 interns, my internship at GE Healthcare culminated into a full-time Software Engineer role upon graduation. Over the last 2.5 years, I have worked on multiple high-scale enterprise applications - from API Gateways to ETL Softwares and even microservices. Additionally, I helped build a ticket query resolution chatbot using the Botpress SaaS platform. I expanded the capabilities of the Botpress SaaS platform to include an analytics/visualisation engine which captured the various metrics to optimise chatbot responses. These metrics included, but weren't limited to, user behaviour, flow usage, and tickets raised. My passion for cyber-security led to my active participation in multiple security reviews of the products GEHC uses and penetration testing on APIs built. The learnings gained from these exercises further fuelled my desire to continue my studies in this area.

Despite coming from a patriarchal society in a developing nation, I have had the privilege of having access to opportunities that have propelled me to be where I am today. Knowing this, I have tried to give back to society in every way. To aid women who don't have a great support system, I co-founded the ACM-Women chapter at PESU. We conducted workshops to encourage them to pursue a career in STEM. I worked with Sitara Akka, a non-profit organisation, and helped curate Teacher Instruction Kits that helped teachers better explain mathematical concepts to visually impaired students. My contributions haven't been limited only to the field of education. I am a proud member of the GE PRIDE Pillar which drives inclusion and brings awareness about the LGBTQ+ community at GE. I am working actively as an ally trainer - helping my fellow employees unlearn their biases.

I aim to strike the right balance between supporting the community and fulfilling my aspirations. As a Cyber Security Expert, I want to excel at threat modelling, risk assessment, maximising privacy, and mitigating vulnerabilities. Back in 2018, I took a tour of the UCD campus and was impressed by the vast expanse and diverse student groups. Ever since, I have wanted to study here. Being part of the Centre for Cybersecurity & Cybercrime Investigation at UCD, I aspire to work on security protocols and privacy laws surrounding personal data. I would love to work with law enforcement in areas of digital forensics, malware and database investigations. I believe I can contribute holistically to the centre and bring about significant change. With modules on Software Engineering, Data Manipulation and Visualisation, Information Security, Ethical Hacking, and Distributed Computing, I am looking forward to an enriching learning experience at UCD.