“Data is the new oil,” said Clive Humby—and that truth has continually shaped my academic journey. I’ve long been fascinated by the power of data to uncover insights, guide decisions, and improve lives. What began as a general interest in technology matured into a passion for data science: a discipline that blends logic, mathematics, and real-world relevance to solve complex societal challenges.

I’m especially drawn to how data science supports decision-making in education, sustainability, and civic systems. Whether building statistical models or evaluating feature importance, I’ve come to appreciate the rigor and responsibility that go hand in hand with working in data. While AI is a powerful application of this field, my primary focus lies in mastering the data-driven foundations—understanding how to clean, model, interpret, and explain the information that shapes our world.

This commitment is what draws me to the B.Sc. (Hons) in Data Science and Artificial Intelligence at Nanyang Technological University. NTU offers not only technical depth in statistical modeling and machine learning, but also a strong ethical and interdisciplinary lens—qualities I value deeply. It is a program that trains students to work at the intersection of data and humanity, innovation and integrity.

Academically, I’ve built a strong foundation in Mathematics, Computer Science, and Physics. I am currently pursuing my CBSE Grade 12 with a predicted aggregate of 90–95%, and have scored 1350 on the SAT. These courses have trained me to think analytically, build structured models, and approach problem-solving with clarity and depth—skills that translate naturally to the study of data science.

To reinforce my learning, I completed IBM’s Data Science Specialization and Machine Learning with Python, which taught me the full data pipeline—from acquisition and wrangling to modeling and visualization. I also pursued Microsoft’s Responsible AI course and UNESCO’s *AI and the Rule of Law* to better understand how data-driven systems can impact people, institutions, and civil liberties. These certifications grounded me in both technical skills and responsible design.

One of the most impactful applications of what I’ve learned is the **College Admission Predictor**, a full-stack machine learning project I developed to estimate students' chances of admission based on academic and socio-demographic data. Using models such as Logistic Regression, Random Forest, SVM, and Gradient Boosting, I built a pipeline with SMOTE for balancing, GridSearchCV for optimization, and SHAP for interpretability. What began as a modeling challenge quickly became an ethical one: How fair is the prediction? What biases affect the result? I conducted EDA to examine the influence of income, school type, and parental education, and used permutation importance and visual audits to assess feature impact.

To ensure transparency, I documented the entire project on GitHub and wrote a blog on LinkedIn titled *“How I Built a Fair and Explainable College Admission Predictor Using AI.”* I’m also deploying the model via Streamlit to make it accessible to students, educators, and reviewers. This experience taught me that responsible data science isn’t just about performance—it’s about communication, accessibility, and societal relevance.

Alongside technical work, I authored a research paper titled *“Why and How Do Hackers Hack,”* which explored cybersecurity threats and the dual role of data in both digital risk and

defense. I examined case studies from India, China, and the U.S., and investigated how AI-driven data systems can be used to manipulate or protect infrastructure, healthcare, and finance. With a plagiarism score of just 0.7%, this research reflected my growing interest in adversarial thinking, governance, and ethical data use.

Beyond academics, I've led initiatives that reflect my belief in using data and systems thinking for the public good. I co-founded **Green Warriors**, a sustainability initiative in my apartment complex where we introduced composting, led eco-awareness campaigns, and planted trees. At school, I served as **Sports House Captain**, helped organize Annual Day and Farewell events, and was awarded **Best Athlete** for four consecutive years. These experiences taught me how to manage teams, communicate across disciplines, and lead with purpose.

I've also nurtured creative pursuits through freelance photography, performing arts, and Kalarippayattu, a traditional Indian martial art. These activities developed my ability to observe details, stay disciplined, and engage diverse perspectives—traits I now apply to data science work.

Looking forward, I want to apply data science to high-impact domains like education and civic systems. I am especially interested in data explainability, social fairness in modeling, and transparent policy analytics. NTU's DSAI program offers the rigorous academic grounding and ethical training to pursue this vision.

I'm particularly inspired by **Assoc. Prof. Sourav Saha Bhowmick**, whose work in data management, mining, and bioinformatics reflects the kind of socially relevant research I hope to contribute to. Learning under his mentorship would be both a challenge and an honor.

Finally, I am fully committed to NTU's **three-year Service Obligation**. I see it not just as a requirement, but as an opportunity—to grow professionally, to contribute to Singapore's innovation ecosystem, and to apply my skills where they can make a difference.

In summary, I bring to NTU a profile built on academic depth, technical capability, ethical awareness, and community leadership. At NTU, I hope to not only analyze data, but to transform it into systems that are equitable, responsible, and built for impact—because I believe data should not just inform decisions, but improve lives