Martin Chernyavskiy
Statement of Interest: AI for Autonomous Systems Research Opportunity

I am writing to express my enthusiastic interest in the Undergraduate Research Opportunity in AI for Autonomous Systems. My specific interest in this field was ignited during my study abroad experience at Peking University, where I was introduced to modern computer science research. I was especially drawn to the work in autonomous driving. The challenge of fusing multimodal sensor data to build coherent 3D perception models was the most compelling and solidified my desire to contribute to this area. This experience provided a crucial real-world context for my academic pursuits in Computer Science, Mathematics, and Statistics.

My ability to contribute to your team is grounded in practical experience. At Cardinal Trading Group, I developed and backtested quantitative strategies in a Python environment, which sharpened my skills in rigorous model validation and performance analysis under tight constraints. I am confident this hands-on experience is directly transferable to benchmarking the autonomous driving ML algorithms mentioned in the project description.

Furthermore, my project and research background aligns with the technical demands of this work. In developing "CloudBrew," I architected a serverless, event-driven pipeline on AWS, providing me with direct experience in the principles of scalable, distributed systems relevant to HPC environments. My current research in the Department of Mathematics, which involves formalizing proofs for complex geometric sets, has directly prepared me to tackle the abstract geometric and algorithmic challenges inherent in 3D/4D perception modeling.

My unique blend of international academic exposure, practical software engineering skills, and relevant mathematical research experience would allow me to make a meaningful contribution to your team. I am eager to apply my background to the challenges of AI for autonomous systems.