

Dear Academic Committee,

I am writing to express my strong interest in pursuing a PhD in Computer Science at the Institute of Science and Technology (IST) Austria, with a focus on Data Science, Machine Learning, and Information Theory. My background in engineering, software development, and data science has ignited a keen interest in addressing complex inference problems within wireless communications and machine learning. With a Master's degree in Control Engineering and substantial experience as a Web Application Developer, I am eager to contribute to the innovative research of the Mondelli group, particularly in developing mathematically principled solutions to challenges posed by large-scale data sets.

In my current role as a Web Application Developer at Awash Bank, I have consistently introduced effective solutions that have had a significant impact. I have developed and managed APIs, created dynamic web applications, and led the development of projects such as the Rent Amortization and Follow-Up System, which automated key processes and improved operational efficiency. These experiences have honed my technical skills, such as expertise in Java, PHP, C#, Spring Boot, python and API integrations. They have further deepened my interest in using data-driven approaches to optimize systems.

IST Austria's focus on applying information theory to optimize wireless communication and machine learning algorithms deeply resonates with my academic and professional aspirations. I am particularly excited about the opportunity to contribute to the Mondelli group's research into how to extract sufficient information from data to solve inference problems, all while considering trade-offs in complexity, reliability, and latency. I look forward to engaging in cutting-edge research to develop algorithms that are both mathematically sound and applicable in real-world scenarios.

My academic journey has provided a strong foundation for this pursuit. I hold a Master's degree in Control Engineering from Adama Science and Technology University, and my undergraduate studies in Electrical Power and Control Engineering and Electronics and Communication Engineering were complemented by a dual major. I received several awards for my academic performance, including an Academic Excellence Award and the Best Girl Scorer Award. During my studies, I worked on projects such as designing a self-balancing two-wheeled robot with Integral Sliding Mode Control (ISMC), where I applied advanced engineering principles to solve complex challenges. This work, along with my skills in MATLAB/Simulink, Java, and PHP, positions me well to thrive in IST Austria's interdisciplinary research environment.

Additionally, I have pursued certifications in Machine Learning and Data Science, alongside training in Data Analysis, which has provided me with a deeper understanding of the analytical tools and techniques critical to data-driven research. These skills, combined with my professional experience, will enable me to contribute effectively to research that addresses critical challenges in fields like wireless communications, machine learning, and information theory.

Pursuing a PhD at IST Austria is an exciting opportunity for both personal and professional growth, and it aligns with my aspirations to contribute to technological advancement in Ethiopia.

I plan to leverage the advanced knowledge and research skills gained from IST Austria to address pressing challenges in sectors such as banking, education, and healthcare in Ethiopia.

Thank you for considering my application. I am confident that the academic rigor and interdisciplinary exposure at IST Austria will provide me with the tools necessary to excel in Data Science, Machine Learning, and Information Theory. I look forward to the opportunity to contribute to the Mondelli group's research and make a meaningful impact in both the academic and technological communities.

Sincerely,  
Lalise Fufi