Applicant: Yacob, Abiel Abrham

M.Sc. Computational Modelling and Simulation

<u>Statement of purpose</u>

Dear Admissions Committee,

I am excited to apply for the Master's program in Computational Modelling and Simulation at the Technical University of Dresden. After careful consideration, I have decided to specialize in visual computing and/or logical modelling as my concentration within the program. I believe that this program will provide me with the necessary skills and knowledge to create innovative solutions that leverage computer graphics and logic.

My passion for technology started at a young age when I was fascinated by smart tools such as chatbots and fingerprint verification. As I grew older, my interest in programming languages and mathematics deepened, and I decided to pursue a degree in Computer Science at the Eritrea Institute of Technology. During my undergraduate studies, I gained hands-on experience with data structures, algorithms, Software engineering principles, and data analysis. I also developed a strong background in mathematics that helped me find creative ways to solve complex problems related to data analysis.

In addition to my regular classes, I continued to expand my knowledge and skills in programming languages. In 2019, during my college sophomore year, I completed a rigorous Java programming course at the Polytech Vocational Centre in Asmara. In this course, I was introduced to object-oriented programming, algorithm generation, and database connectivity. I also worked as Java developer on an assessment project where I and four other classmates developed a hotel reservation system.

My final year project in college was to integrate advanced email scraping algorithms into an online registration and payment confirmation system to automate and improve the efficiency of the system using PHP and JavaScript. The project proved to be particularly challenging, as the lack of sufficient internet access and research resources in Eritrea presented a significant obstacle. However, I remained undaunted and drew on my strength of being a target-focused and committed individual. As both the team leader and developer, I was responsible for finding creative solutions to complex technical problems, motivating my team to persevere through the work. Our hard work paid off, and we successfully delivered the project within the allotted time.

My experience working as a part-time Python developer with an experienced computer engineer on a real-time facemask detection-based door lock project further cemented my passion for software development. I was responsible for designing and implementing a

complex system, leveraging skills in data pre-processing and model training and deployment. I used the OpenCV library to process images and videos and implemented different algorithms for data training and to build models.

My technical experience and educational background have prepared me well for the Master's program in Computational Modelling and Simulation with a concentration on visual computing and/or logical modelling. I am confident that I possess the skills and knowledge necessary to excel in this program and make meaningful contributions to the field.

My motivation for applying to the graduate program at the Technical University of Dresden stems from its reputation as one of the top universities in Germany and Europe. The faculty's commitment to excellence in research and teaching and the Department of Computer Science's expertise in the areas of computation and IT are some reasons why I am impressed by the university. I am also particularly fascinated by the cutting-edge research being conducted at the Interactive Media Lab Dresden, under the supervision of Prof. Dr.-Ing. Raimund Dachselt. The ongoing and novel projects being developed at the lab are incredibly inspiring and I am excited about the prospect of contributing to this work. I would love to work on an ongoing or novel research project at the lab and believe that the program at the Technical University of Dresden will provide me with the skills and knowledge required to succeed in this endeavour.

In conclusion, I am enthusiastic about the prospect of joining the Master's program in Computational Modelling and Simulation with a concentration on visual computing and/or logical modelling at the Technical University of Dresden. My technical background, educational experience, and passion for computer science make me a strong candidate for this program. I am confident that attending this program will provide me with the cutting-edge skills and knowledge necessary to achieve my career goals.

Thank you for considering my application.