I am a fourth-year B.Tech Artificial Intelligence Engineer at the G. H Raisoni College of Engineering Nagpur, (India). I am interested in Computer Vision, Medical Imaging, Deep Neural Networks, and Data Science, particularly its applications to healthcare. I would like to formally express my interest in joining the OIST as this research internship program in the Fall of 2024.

Since the first year of my bachelor’s degree, I have become enamored with the art and science of research, resulting in the actualization of one research paper focusing on **A Comparative Study of Feature Extraction Models for Image Caption Generation** [[1]](https://www.ijraset.com/research-paper/feature-extraction-models-for-image-caption-generation) and my first book Publication focuses on **Mastering Neural Networks: From Basics to Advanced Deep Learning** [[2]](https://notionpress.com/read/mastering-neural-networks-from-basics-to-advanced-deep-learning). Also, I have started writing blogs related to medical imaging **Detecting Glaucoma Using Machine Learning: A Comprehensive Guide** [[3]](mailto:medium.com/@manapureshreya8/detecting-glaucoma-using-machine-learning-a-comprehensive-guide-a07d0b641e91).

If accepted, I hope to have the privilege of working at the Department of Computer Science under the supervision of Yamada Makoto or Gerald Pao Chan on the topic Machine Learning and Data Science (MLDS) Unit or Biological Nonlinear Dynamics Data Science Unit. I wish to continue my research endeavors to reflect their active efforts in improving the quality of life and extending the lives of patients at scale through the eclectic union of AI and medical imaging records.

With my strong background in developing advanced Machine Learning models, I have the required skills to contribute to ongoing research work at the MLDS unit. MLDS unit relates to statistical modeling for high-dimensional data which aligns with my current skill and experience in optimizing machine learning algorithms such as Graph neural networks, and Convolution Neural Networks for real-world applications. I am looking forward to contributing of development Machine Learning methods for real-world applications.

At OIST, I intend to specialize in public health for my graduate studies, with a focus on applying state-of-the-art machine learning methods to implement automated clinical screening systems for analyzing wearable monitoring data. Specifically, I would like to study the clinical value of developing continual learning models that can adapt learned knowledge with the impact of genetic determinants on the progression of health conditions, to possibly identify appropriate treatment interventions for medical imaging. My goal is to develop an unbiased methodology to be followed and for pathologists to have ample time to focus on the more important aspects by slashing down 95% human error.