STATEMENT OF PURPOSE

My name is Ponni Sivanantham. I am deeply interested in pursuing and advancing my career in the field of Biomedical Engineering as I have a great passion for the subject and solid academic credentials hence my desire to take up an M. Sc. Neural Engineering Program at HTW SAAR.

I have undergone an intensive study of subjects like biochemistry, Biological control Systems, Neurology, Biomaterials, Biotelemetry, etc. as a Bachelor of Technology in Biomedical Engineering from Sathyabama Institute of Science & Technology (Deemed University) Chennai, INDIA. My IELTS overall band score is of 7.

When studying at the undergraduate course, I took an active part in the university extra curriculum including presenting a paper entitled ''Detection of Osteoporosis and Osteoarthritis Using Deep Learning Algorithms' in the 3rd International Conference on Intelligent Vision and Computing. Also, my bachelor's project was aimed at the DfE analysis and evolution of braces related to lower back pain which proves my intent to contribute to the field of healthcare. Additionally, participated in the Ninth International Conference on Biosignals, Images and Instrumentation organized by the Department of Biomedical Engineering.

I have also attended several technical trainings and workshops and have certification in several technical skills. Among these are programming with C and C++, 3D printing, instrumentation, data acquisition using Python programming language, and computational biology. In addition, there are specific workshops that I have participated in, for example, IP awareness, IoT in image processing, and clinical artificial intelligence for biodesign, which are all evidence of my continued professional development on this subject. Additionally, I successfully completed 15 days Skill Development Program on Technology Transfer using Java, Python, SQL, Julia and GO and completed Ten Day Certificate Course on "Real Time Python Based Data Acquisition" from Sathyabama Institute of Science and Technology, Chennai, India

Internships: I have been working for internships in various offices in an effort to gain on-the-job experience in the field of biomedical engineering. Interestingly, I also training on a virtual internship for industrial-based embedded systems with AI & IoT at NSIC - Technical Services Centre, Chennai, India. Further, I attended a training program in the hospital Biomedical department at Dr. Agarwal's Group of Eye Hospitals Chennai which helped in getting experience of health care operations. In addition, I underwent a 10-day biotech summer internship on computational biology conducted by the University, Tamil Nadu, for refining my knowledge regarding this discipline. I also received online internship training on artificial intelligence from Retech Solutions Pvt. Ltd. Chennai, which further helped me gain more expertise in these areas that are significantly expanding. In addition, during the internship program during the summers while at Mahsa University in Malaysia, I gained insights on recent moments about the Biomedical Science and widen up my view.

Why Germany and HTW SAAR: The German educational system has always emphasized technology and engineering, which explains why neural engineering is a great choice for further studies in the country. Germany represents a particularly attractive location for further professional development and higher education in neural engineering for several reasons. Firstly, Germany is known in the world as one of the leaders in engineering and technology, has excellent universities and progressive research institutions. Furthermore, the country's emphasis on innovation and technological progressions provides a good context for further studies and research on the latest discoveries in neural engineering. Germany comprises of a unique culture that is diversified and is usually a source of great learning for every student who might be from a small and less exposed region. The M. Sc. course outline of the Neural Engineering program at HTW SAAR is well crafted to support my aspirations. The program's emphasis on the quantitative molecular biology aspect and the interdisciplinary approach to the program which is a mix of engineering, biology, and computer science will enable me to grasp more ideas in the field of neural engineering.

Learnings and Benefits from the Course: The M. Sc. I found the most suitable program that suits my interests and expectations as a Biomedical Engineering student – the Neural Engineering program at HTW SAAR – this is an opportunity to study what I am passionate about – Biomedical Engineering – with the use of modern technology and extensive knowledge of the functioning of the brain. What exactly motivates me about the program is that it has extensive focus on quantitative molecular biology which will enable me to gain comprehensive knowledge of how neural processes are molecularly encoded. Also, the fact that computational neuroscience and neural signal processing dominate the curriculum will fit in my liking as I have the dream of using machine language and artificial intelligence to solve problems pertaining to interpretation of neural data. In addition, specialized laboratory training in the design, fabrication and testing of neural prosthetics, brain-computer interfaces and neural implants will provide practical experience and specialized skills required for bridging the gap between basic science and product development for individuals with neurological disorders and disabilities.

The M. Sc. Neural Engineering program at HTW SAAR Aspirations: I want to be a part of the research that promises new focuses and solutions in the field I am studying. My ultimate career is to associate with such Universal firms, forefront in neural technology like Neuralink; Kernel; BIOS Health. Additionally, BIOS Health's current emphasis on the creation of neural prostheses and elucidation of neural signal processing mechanisms would permit me to pursue my interests in the company. The goal of such collaboration with revolutionary companies is to use my experience in neural engineering and provide the world with technologies that will enhance the lives of people having neurological disorders and disabilities.

Lastly, I would like to thank you for considering my application and I hope to hear a positive response from your end.

Regards

Ponni Sivanantham