**Statement of Purpose**

In the dynamic realm of biomedical engineering, I, Rakesh Sharma, am a seasoned professional devoted to research and innovation. My expertise in image processing, image analysis, and artificial intelligence has evolved over years of addressing complex multidisciplinary challenges. Fueled by an unwavering passion and driven by intricate problems, I persistently strive to enhance my skills, aspiring to become a more proficient and accomplished researcher.

My scientific odyssey commenced at the prestigious Indian Institute of Technology (IIT), where I translated my passion for healthcare solutions into pioneering technological breakthroughs. A standout project involved developing a pressure sensor-embedded contact lens for real-time intraocular pressure measurement, a critical aspect in glaucoma detection. My master's thesis introduced a novel bone cement (Poly-methyl methacrylate)-based nano-composite, significantly enhancing bone repair and resulting in a tangible impact on healthcare, including a published journal article.

While the pursuit of graduate studies had always been my aspiration, personal reasons directed me toward an industrial journey, beginning at Wipro. In this dynamic environment, I specialized in developing Android apps infused with computer vision and audio signal processing, leading to a filed patent application and laying the foundation for my enduring fascination with cutting-edge technology.

Joining Achira Labs marked a pivotal moment, offering a meaningful avenue to contribute to the healthcare sector. Despite a substantial salary cut, I eagerly seized the chance to democratize healthcare through active involvement in developing an innovative in-vitro diagnostics platform. My impactful contributions, spanning the creation of biosensor data analytics algorithms and microfluidics-based immunoassay platform optimization, were recognized with keynote presentations at the prestigious MicroTAS international conference. At Achira Labs, our endeavors culminated in the successful launch of a groundbreaking product, accompanied by numerous recognitions and research grants from the Indian government, solidifying our commitment to advancing healthcare technologies.

In the thriving startup landscape of Bangalore, I embarked on a transformative professional journey, compelled by a significant challenge presented by connected surgeons. This endeavor led to the establishment of Comofi Medtech, a startup I co-founded, and the creation of an assistive surgical robot platform. Assuming a leadership role, I engaged in the intricate analysis of multi-modal medical images, showcasing my passion for innovation at the intersection of technology and healthcare. Our pioneering approach not only demonstrated technical prowess but also underscored the profound impact of technology on surgical precision. Recognition followed as we secured grants from the Indian government and raised funding from venture capitalists, marking a pivotal phase characterized by embracing challenges, acquiring diverse skills, and engineering marketable solutions. Amid the challenges posed by the COVID-19 pandemic, our startup seamlessly adapted, extending its operations to include the manufacturing of essential medical supplies. On a personal level, I contributed to the global pandemic response by developing a statistical model to enhance testing capacity.

Assuming the role of a data scientist at Eli Lilly expanded the scope of my professional journey, exposing me to the intricate lifecycle of medical device product development at an industry-leading organization. Within this role, I tackled complex problem statements and contributed to diverse projects, spanning CT scan reconstruction, exploration of novel drug delivery methods, creation of a genetic medicine toolkit, and generation of data-driven insights for medical device advancements. Collaborating with esteemed professors such as Prof. Charles Bouman, Prof. Pavlos Vlachos, and Prof. Arezoo Ardekani, my dedication to biomedical engineering transformed into a profound calling. This career phase, coupled with my experiences at Stanford University, reignited my passion for pursuing graduate studies.

Driven by a deep-seated passion for biomedical engineering and signal processing, I am enthusiastic about embarking on a transformative journey of graduate studies at [University Name], renowned for seamlessly merging theoretical rigor with practical application. Drawing inspiration from the groundbreaking work of Professor [Specific Faculty Member] in [Their Research Area], my dedication is centered on advancing biomedical signal and image processing, with a specific emphasis on harnessing artificial intelligence for diagnostics and therapeutics. Throughout my PhD, I aim to push the boundaries of research in this field. Post-PhD, my goal is to persist in contributing to research while focusing on applications with tangible real-world impact in the near future.

Beyond my technical acumen, my professional experiences have equipped me with the skills to make meaningful contributions to [University Name]'s esteemed research community. I envision [University Name] as the catalyst that will crystallize my aspirations, propelling me toward innovative breakthroughs at the intersection of biomedical engineering and signal processing. Armed with a unique perspective and determined to leave a lasting impact, I am poised to contribute my skills to the university's academic tapestry.