

THE UNIVERSITY  
OF PENNSYLVANIA

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**Letter of Intent for Immigration Petition at USCIS**

**Background:** I am an interdisciplinary researcher who combines the scientific elegance of machine learning and control theory with the practical impact of modern robotics to create technological solutions that improve healthcare delivery for cancer patients. I am currently a postdoctoral researcher at The University of Pennsylvania's School of Medicine and I was previously a visiting postdoctoral scholar at the University of Chicago's School of Medicine. In my postdoctoral research duties, I work on problems spanning conceptualization of new hardware and software tools for improving the *treatment planning* process in *cancer radiation therapy* in our medical clinics at these Universities. My work has made meaningful impact in disciplines within and outside medicine, with citations from government and higher learning research institutions across the globe. Example institutions that have used my work include the National Aeronautics and Space Agency's Jet Propulsion Laboratory (NASA JPL), the 6th R&D institute of South Korea's Agency for Defense Development, Uber AI Labs, and the Chinese Academy of Sciences among others.

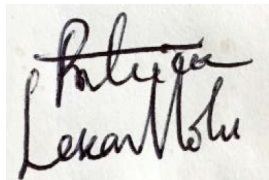
**Future Research Plans:** My research in the past has focused on deriving the control and machine learning theoretical underpinnings for realizing my technical objectives namely using robots as motion-compensation systems during cancer radiation therapy. Going forward, my goal is to scale the use of the robots I have proposed and designed away from phantom tests to clinical trials at hospitals and medical schools in the United States, where I will have access to facilities to carry out my research. I want to achieve my goals in the United States because cancer is a large economic burden to the United States. This year alone, it is projected that 1,762,450 new cases of cancer will be diagnosed, and 606,880 people will die from the disease. This constitutes a national expenditure of 4.2% of overall health care spending per 2017 budget. Along with the excellent researchers that I collaborate with at Penn Medicine, I am working on the next stages of deploying these robots on real-world cancer patients to help doctors, medical physicists, dosimetrists and lab clinicians better manage cancer treatments.

**Future Job Opportunities:** To realize my research objectives, I am being actively sought out for research opportunities at large research corporations in America. For example, on October 1st, a PhD recruiter at Facebook AI Research sought me out asking about my availability for a research opportunity where I can apply my skills to solving real-world problems. Here is an excerpt from her

email *"I saw your background and thought you would be a great addition to our team. Facebook has been rapidly growing and we are on the look-out for top PhD's/researchers to help our on our mission to give people the power to build community and bring the world closer together. As a PhD [sic], your research background would be considered since our aim is to find a team that aligns with your expertise and interests"*. I am also currently in the final stages of my interview process with Brandeis University in Massachusetts where I will be helping develop the next generation of roboticists as an instructor in robot manipulation, planning and control.

**Conclusions:** Given my record of past successes at my research, and academic endeavors, I am confident in my ability to find a suitable job in the United States once I receive my Visa. I have responded to the challenges in my field with a novel and accurate robot motion-compensation system for real-time cancer irradiation on a treatment bed, while guaranteeing patient comfort, dose efficacy and providing compliance in manipulation – conditions that other researchers' innovation have not met. I have a masters degree in control systems, which was very helpful when I started the head and neck immobilization project in RT during my PhD in robotics at the University of Texas at Dallas. My unique background has led me to a postdoc position at one of the finest medical schools in the country where I continue to combine scientific elegance with practical impact, delivering on technologies to advance the state of bleeding-edge healthcare in the United States. I intend to continue contributing to the research community while gaining dicipline expertise and helping develop the next generation of talents through mentorship programs.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ogunmolu' and 'Lekan' below it, on a light-colored rectangular piece of paper.

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