

Dear Hiring Manager,

I am writing to express my strong interest in the Machine Learning Engineer role with Stanford's AI Evaluation Lab. With my background in computer science research and passion for developing robust machine learning systems, I am confident I would make a valuable addition to your team.

My academic and professional experiences align well with the responsibilities and qualifications for this role. As a graduate student at the University of Southern California, I have taken advanced courses covering topics like machine learning, computer vision, and natural language processing. Moreover, through my research experience, I have hands-on experience building end-to-end data pipelines, training deep learning models, and deploying them into production. For example, this year at USC ISI, I developed a novel food image to recipe generation system using GPT, BLIP and Vision Transformers and wrote a detailed paper on it for WACV 2024. I also led development of a healthcare question answering system published in ACL BioNLP'23, ensuring training data privacy using differential privacy. My passion for research in AI started during my undergraduate days at NIT Durgapur, where I contributed to diverse projects ranging from Intelligent Fire alarms to Underwater Image Enhancement systems. These projects have enhanced my ability to leverage state-of-the-art technologies, such as transformers and large language models, to build AI systems that solve real-world problems.

As course and passion projects, I have built neural networks, hidden Markov models, evolutionary models, gameplaying algorithms, and various other AI frameworks ground up. This hands-on experience has not only improved my technical skills but has also provided me with valuable insights into the inner workings of these models. For instance, I have designed and implemented multilayer perceptron and convolutional neural networks using only NumPy and Python. Creating key components like convolutional layers, pooling, dropout, and regularization from scratch has led me to understand how the math behind it works. Such experiences have empowered me to customize AI architectures to suit novel applications effectively. I also have experience with MLOps processes and cloud deployment strategies using services like AWS and GCP. My background in computer vision and experience working with healthcare data make me well-suited for this role developing solutions for medical imaging applications.

I am drawn to this opportunity because of my passion for translating cutting-edge research into real-world systems. Stanford's mission to produce world-changing research and technology aligns with my aspirations. I would welcome the chance to collaborate with your talented cross-functional team, especially senior faculty leaders. Building robust ML infrastructure to enable Stanford Radiology's downstream applications would be an immensely fulfilling opportunity.

In closing, I am excited by the prospect of joining Stanford's AI Evaluation Lab as a Machine Learning Engineer. This role would enable me to apply my specialized skills and experience to further the lab's important research initiatives. Thank you for your time and consideration. I look forward to discussing my qualifications further.

Sincerely,
Dhiraj Chaurasia