INDIANA UNIVERSITY

RICHARD M. FAIRBANKS SCHOOL OF PUBLIC HEALTH
SCHOOL OF MEDICINE
Department of Biostatistics and Health Data Science

September 8, 2024
Indiana University (IU) University Information Technology Services (UITS)
Advanced Cyber Infrastructure (ACI) Student Fellowship

Dear ACI Student Fellowship Review Committee:

I am writing to strongly recommend Dilip for the Advanced Cyber Infrastructure (ACI) Fellowship. As a faculty member at Indiana University School of Medicine and the principal investigator of a lab focused on bioinformatics research, I have had the pleasure of working with Dilip since May 2024, when he initially joined my lab as a research volunteer. His impressive computing skills and deep understanding of artificial intelligence models have since led to his current role as a research assistant in our lab.

Dilip has played a crucial role in our Alzheimer's disease (AD) prediction project, where we're trying to find links between genetic markers and brain regions to improve early AD diagnosis. Our bigger vision is to build a scalable model that can integrate different data types for a variety of diseases, making our research more widely applicable. Dilip has taken the lead on the imaging side of this project. With his expertise in medical imaging and deep learning techniques, he has been instrumental in exploring research gaps and designing the experimental framework. His adaptability and openness to new challenges make him a standout lab member.

In addition to his technical skills, Dilip brings valuable industry experience that complements his academic work. He approaches problems with both a theoretical and practical mindset, which has enriched our research. In our monthly journal club meetings, he is always ready to offer thoughtful insights, engage in discussions, and constructively critique others' work. His collaborative nature, intellectual curiosity, and willingness to support his teammates have made him an essential part of our lab.

I've also been impressed with Dilip's initiative in applying for the ACI Student Fellowship. As we are working on cutting-edge research tackling the computational modeling challenges in the AD area requiring interdisciplinary expertise with humongous 3D image data and genomic data at the same time, this is an excellent program in which he could expand his knowledge, collaborate with other researchers, and bring those new high-performance computing (HPC) skills back to our lab. I'm confident that the experience he will gain from this fellowship will benefit him and significantly contribute to our research's success. The skills and insights he'll acquire will help us tackle challenges like resource allocation and HPC software design. Our preliminary results have shown great potential. As we move to the next phase of introducing more complex and high-resolution images and genetic data, the need for some support from the University Information Technology Services would significantly enhance our potential and speed up the progress. Our project timeline aligns well with the ACI program, and we are shooting for the publishable manuscript to be submitted to the high-impact-factor journal (i.e., Nature Methods) by December. The support from ACI in advancing our work will be highly acknowledged in future publications.

Overall, Dilip has my most enthusiastic support for his ACI Student Fellowship application, considering his great work ethic, technical expertise, attitude toward learning, and collaborative spirit. I firmly believe the Fellowship will foster our scholarly and creative research to successfully

develop a scalable, robust, and interpretable deep learning framework for advancing disease mechanisms and prognostics by integrating imaging and genetic data.

Sincerely yours,

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