



19 September 2021

To Whom It May Concern,

I write this letter to express my support of Ms. Mansi Uniyal's Globalink Research Internship application. Mansi has been studying as one of 8 undergraduate summer internship students under my supervision for 5 months. During this period, she has carried out quality research and demonstrated strong motivation for personal excellence.

Mansi's research focuses on improving the scalability of federated learning, a promising distributed learning framework. In essence, the fundamentals of federated learning rely on exchanging the entire parameters of a model, which thus cannot support large-sized models such as deep neural networks. To resolve this fundamental problem, Mansi has applied a split learning framework into federated learning, which splits a large-sized model into multiple segments. Training these split segments is however non-trivial, often hindering the algorithm convergence. In this respect, she has developed a novel training algorithm inspired by self-supervised learning that has not yet been applied in this literature, thereby pushing the frontier of federated learning.

Mansi has corroborated the effectiveness of her proposed idea by extensive simulations. Moreover, she has clearly explained the rationales behind the results via ablation studies with a well-structured experiment plan. Consequently, Mansi has been preparing a paper to be submitted to the NeurIPS 2021 federated learning workshop, which is not very common at the level of not only undergraduate students but also graduate students including over 30 students I have (co-)supervised.

Throughout all these experiences, I have found in her a strong potential to become an outstanding researcher. Thus I give her my strongest recommendation for your program.

Kind regards,

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