November 10, 2021

## To Whom It May Concern:

I am pleased to recommend to you, Philip Carr, a graduate of Caltech with a Bachelors Degree in Computer Science. Philip was an intern in the Summer 2019 Caltech Japan Internship Program at Mitsubishi Electric Advanced Technology Research and Development Center, in which his performance was consistently exceptional.

This summer internship at Mitsubishi Electric Advanced Technology Research and Development Center provided Philip with an in-depth opportunity to explore an exciting combination of two active research fields at Mitsubishi Electric, quantum computing and machine learning, and pursue rigorous experimental study in an interdisciplinary fashion. This internship was technically intensive, requiring him to produce a useful software platform for the investigation of the use of a quantum computing algorithm in a machine learning training process during the summer research period.

Philip consistently demonstrated an impressive understanding of all aspects of the research field. His confidence in computer science and programming reflected a strong capacity to approach problems we sought to resolve, competently evaluate the effectiveness of various analytical approaches and measures employed to determine the success of various machine learning processes, and creatively consider and recommend ways to improve the experimental machine learning pipeline.

One major aspect of the research assignment, in which all of these attributes were evident, was in Philip's excellent utilization of various machine learning principles. This skill allowed him to effectively communicate how to develop the overall experimental machine learning process, modify and adapt existing machine learning systems to the specific problem at hand, and utilize several methods such as multi-threading to maximize processing power, efficiency, and save substantial amounts of time in the machine learning training process.

Beyond his programming ability and machine learning knowledge, Philip demonstrated excellent communication skills. He produced a final presentation that greatly exemplified his research work in a way that was very intuitive and accessible to all the fellow researchers in the department and delivered it in a very comfortable and confident manner.

Finally, Philip showed his passion for novel experiences and cultural exchange through his overall experience living in Japan. He was consistently excited to meet other members of the research department and make friends with other coworkers, and he adapted well to the significant change in environment in Japan, relishing in visiting and experiencing exciting locations and cultural festivities in Japan.

Through his work in and experience outside the research center, Philip has demonstrated that he possesses the intellectual acumen and creativity, perseverance, initiative, and drive to continue to become a successful and well-respected software engineer/developer.

I highly recommend Philip Carr for any position you may offer him.

Sincerely,
Hiroaki Murakami
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