Carnegie Mellon

Computer Science Department
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, Pennsylvania 15213-3891

Tel. 412-268-7561
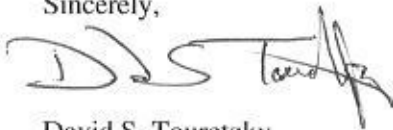
15 August 2020

To Whom It May Concern:

Mr. Rishabh Ramteke did a remote/virtual research internship in my lab between May and August, 2020. His project was to investigate how transfer learning used for object recognition could be employed to allow a mobile robot (the Cozmo robot) with a low-resolution camera to learn to identify objects from a small number of samples.

Mr. Ramteke' prior knowledge of TensorFlow and experience with convolutional networks allowed him to get up to speed quickly even though my lab uses PyTorch, which he quickly mastered.

By the conclusion of the project he was able to show that use of an extensive set of transforms could allow reasonable recognition rates for two-dimensional patterns (Disney stickers) seen from half a dozen viewing angles, but not from a single image. This will enable a future student in my lab to develop code to drive the robot around in order to acquire the types of images we now know we need.

I was pleased with Mr. Ramteke's work and would be happy to welcome him back to my lab in the future.

Sincerely,

David S. Touretzky
Research Professor of Computer Science