Initial Report

Last Modified: 01/17/2018

1. Recommender's Name:

Text Response
Asa Ben-Hur

Statistic	Value
Total Responses	1

2. Recommender's Email Address:

Text Response
asa@cs.colostate.edu

Statistic	Value
Total Responses	1

3. Applicant's name for which you are providing a recommendation:

Text Response
Alex Fout

Statistic	Value
Total Responses	1

4. How long have you known the applicant and under what circumstances have you become familiar with the applicant's academic abilities?

Text Response
I first got to know Alex in my machine learning class. In a class of close to 70 students, he really stood out, and was the only one to earn the grade of A+. He could be counted on to answer my questions, and always had insightful questions of his own. He is the sort of student that makes teaching great fun. Alex joined our program without an undergraduate computer science degree, and I am glad our recruiting committee decided to take a chance on admitting him: He did extremely well, and I was fortunate to recruit him to my research group, where he finished a very strong master's thesis.

Statistic	Value
Total Responses	1

5. Please assess the applicant's ability to contribute to the Data Science for the Public Good Fellowship Program.

Text Response
Alex has a VERY strong background in data science, machine learning, big data, and math/statistics that comes from his research, coursework, and innate curiosity. For his master's thesis I gave him a very challenging problem: formulate an appropriate convolutional operator on a graph structure that would be used for representing protein three dimensional structure with the objective of predicting interaction sites between proteins. This is a much more challenging question than I usually give a master's student; however, I felt confident that Alex would be up for the challenge. He went through the literature, and found a couple of related approaches, and came up with what looked like a very reasonable design. In collaboration with two other graduate students, he implemented his ideas in TensorFlow, along with other variants we found in the literature; the resulting method provided accuracy that was clearly superior to the state-of-the-art, which was an SVM-based method published by my lab a few years ago. The method was recently presented at the NIPS conference. See: Alex Fout, Jonathon Byrd, Basir Shariat, and Asa Ben-Hur. Protein interface prediction using graph convolutional networks. In: Advances in Neural Information Processing Systems (NIPS), 2017. During the course of the work, Alex was very conscientious about running well-thought experiments, and has made the code and data publicly available through github; Alex put an effort into making a usable package that would enable others to reproduce his work; he has tremendous integrity, and wants his work to make a difference, and not end up as yet another paper. During our weekly lab meetings I got to see that Alex has a talent for explaining challenging concepts in a clear and easy to understand way, which speaks to his ability to integrate difficult concepts and making them accessible to others. I also had Alex as a TA in one of our lower division courses (Object Oriented Problem Solving), and have nothing but praise for his performance in this role. He was very proactive and I knew I could rely on him to do what's needed and get it done in a timely and exacting manner. I also got very good feedback about him from students taking the course. On a personal level I found him to be very friendly and outgoing, and I could see the caring he had for the other members of the team. All of us very much enjoyed working with him.

Statistic	Value
Total Responses	1

6. How would you describe the applicant's motivation and initiative in pursuing his/her academic and career goals?

Text Response
Alex is driven by his curiosity, wanting to know how things work (which led to him to pursue a PhD in statistics after finishing an MS in computer science), and a desire to work on problems that can lead to a positive change in the world.

Statistic	Value
Total Responses	1