Date: 04.10.18

Subject: letter supporting Sarah Wassermann's application for a NIPS 2018 Travel Grant

To whom it may concern,

As collaborator, internship supervisor and research supervisor, it is a pleasure to me to write this letter supporting Sarah Wassermann's application for a travel support grant to attend NIPS 2018.

Sarah has recently started her PhD @INRIA Paris, which I directly supervise, together with Dr. Renata Teixeira. She's working on a very interesting and paramount subject for the future of the Internet as a whole, that of monitoring and better handling networks from a user-centric perspective. Her PhD topic is on monitoring and diagnosing Internet-QoE (Quality of Experience), relying on big data analytics and machine learning approaches to handle the huge amounts of data generated by end users and the underlying communication networks.

During her time as master student, Sarah performed multiple international research internships and pushed-forward collaborations around the globe, including Telecom Paristech in Paris, FTW and AIT in Vienna, and Northwestern University in Chicago.

Sarah's research and approach to large-scale communication networks analysis is mainly data-driven, relying on big data analytics and machine learning to tackle different challenges. While machine learning models using deep architectures (i.e. deep learning) have gained path in recent years and have become state of the art in many fields, including computer vision, speech recognition and natural language processing, the application of deep learning approaches, and of machine learning in general is much less developed within the communication network domain.

Together with Sarah, we have been working on the systematic application of machine learning to networking problems, trying to close the gap between the simple usage of machine learning models in networking and their effective and proper operation in large-scale, in the wild environments. Some of her recent papers in this direction include "Improving QoE Prediction in Mobile Video through Machine Learning", "NETPerfTrace - Predicting Internet Path Dynamics and Performance with Machine Learning", and "BIGMOMAL - Big Data Analytics for Mobile Malware Detection". **We are planning to submit two papers to the NIPS 2018 Continual Learning workshop, as well as a paper to the NIPS 2018 workshop on Systems for ML and Open Source Software.**

My experience as Sarah's supervisor and collaborator is highly rewarding, and I have nothing but good words to describe the quality of her work. As an experienced researcher in the field of network measurements and machine learning, I can say that I am very much impressed by the CV of Sarah and by her aptitudes to research, having already demonstrated a high maturity level in an assorted list of topics, all of them linked to the same domain of network measurements and data analytics.

Besides her great aptitudes for research, such as being really hard-working and very self-motivated, Sarah has big human qualities. She is a very open-minded person who easily gets with other people, and is always very enthusiastic in communicating and sharing her ideas with others. She is highly creative and self-motivated, and is always willing to explore new directions and try the things we discuss together with a very proactive and practical approach. At the same time, she has an excellent theoretical background given by a solid mathematics and informatics formation, which makes the perfect ingredient to perform high quality research. Sarah is also a passionate programmer, and she likes to rapidly implement in running code her ideas.

Attending NIPS 2018 conference would be highly beneficial to Sarah, for meeting other students and notable researchers in the field of her work, to get useful feedback on the research directions she is pursuing, and also to get in touch with the NIPS research community. In addition, her presence at NIPS would be also beneficial for the rest of the students, given her great aptitudes and her smart curiosity to put the right questions at the right time, as well as by the complementarity of her research domain, bis-a-bis the application of machine learning into network communication related problems.

For all these reasons, I strongly believe that Sarah would highly benefit from attending NIPS 2018, and warmly support her application.

Yours sincerely,

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