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Rennes, April 2, 2017

Object: supporting letter for Dr. Sebastián Basterrech

I met Sebastian Basterrech several years ago, when he joined our team for the preparation of his PhD in computer science. He defended it in 2012, and since then, we kept collaborating in different research projects. Sebastián's thesis was on statistical techniques problems, both methodological and related to families of applications. We continued collaborating on learning methods mainly, together with performing studies about several specific modeling issues concerning different application areas. I have a high opinion of the person and of his capabilities in research and in collaborative work with other people.

Sebastián Basterrech is a very good researcher, who showed a strong investment during his doctoral work, and who also exhibited a significant amount of creativity and initiative during his sojourn at INRIA. For instance, he developed three sets of different works and contributions during his PhD, and one of these, his work on Echo State Networks, comes from proposals he made alone during the thesis. He looked for experts for developing his initial ideas, found them at Glasgow, in the team of Professor Colin Fyfe, and went there for several months to learn from them and to collaborate with Colin and his team. He learned from that group about Reservoir Computing models in general, and mixed that knowledge with the tools he was developing here, with nice results at the end.

He briefly described his project to me, and I strongly support his proposal, the ideas he wants to develop and the global goals of the research activities he planned. He has many ideas in the area of Machine Learning, and he has already cumulated a nice experience in the field, and in the work associated with exploring new possible ways of attack important problems in that domain. His project is ambitious and it covers several important aspect of modern learning techniques, and he has the background and skills

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for giving to it a nice amount of originality. For instance, he is one of the very few experts in the world being able to combine ideas coming from classical Neural Networks (including the so called “deep” ones, that have emerged as extremely powerful when rich data sets are available), Reservoir Computing ones, where the idea is to mix the capabilities of recurrent neural architectures with the easy-to-train side of networks without circuits, plus the very specific characteristics of Random Neural Networks. I recommend with no hesitation his proposal, and I offered my collaboration to him to work together on some of these aspects (as we have done already in the past) if the project is selected.

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Gerardo Rubino

Kyutech
Kyushu Institute of Technology

Iizuka, April 3, 2017

FROM:
Mario Köppen, Dr. (Eng.)
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TO:
Dr. Sebastian Basterrech
Department of Computer Science
Faculty of Electrical Engineering
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LETTER OF SUPPORT

To Whom It May Concern

With pleasure I heard about the planned project of Dr. Sebastian Basterrech on optimized topologies of Recurrent Neural Systems and its applications, and want to express my strongest support.

Dr. Basterrech and myself had a number of successful collaborations in the past, esp. a research stay at my university in January 2015, and a joint publication at the SMC 2015 conference entitled “Neural Signature of Efficiency Relations” as well as a number of other academic activities like the joint organization of workshops.

In a time where technical systems are getting more and more resilient on mass data processing, complexity, high degree of content sharing and rapid distribution, the user-centric aspects and related theme of fairness in optimization and classification have become of increasing importance, while not yet enough focus is given to this class of problems in current research. Still, a rather plain idea of efficiency prevails, seeing fairness rather as a boundary condition or sub-goal of optimization. Together with my research team we are working on fairness relations esp. in the network design field for several years. I hope that I can bring in expertise of my research group that is very helpful to reach the further aims and goals of the project. A novel idea would be to combine ideas and concepts of fairness relations and the training of recurrent neural network architectures, incl. on their design level – the target of Dr. Basterrech’s research here - and my research team would be highly interested to esp. link this theme with the special topic of topology optimization.

We hope that the project proposal will receive the positive appreciation that it deserves. If there are any further questions or requests, please do not hesitate to contact me via email mkoeppen@ieee.org.

Kind regards
Mario Köppen

Iizuka, April 2, 2017

Wrocław University
of Science and Technology

Konrad Jackowski, Ph.D.
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Wrocław, 02.04.2017

Recommendation letter

To Whom It May Concern

Herby, with a great pleasure, I would like to express my strong support for Dr. Sebastian Basterrech's application for research project on Optimal Architecture of Deep Recurrent Neural Networks.

My opinion about Dr Basterrech, his research knowledge, work ethics as well as personal characteristics, is based on several years of collaboration experience. We met for the first time in Technical University of Ostrava in 2013 where we work together in IT4 Innovation Project. Although we were member of different research teams, we had a chance to carry on extensive and very profitable discussions on our research topics. Since then we stay in contact regularly exchanging results of our researches, consulting problems, sharing new ideas. I always find his comments and suggestions very helpful and inspiring. In my opinion Dr. Basterrech is a very good, hard working researcher, featuring high work ethics and enthusiasm.

I would like also comment the subject of Dr. Basterrech application as it partially overlaps with my research interests. Basically, me and my research team at the University is focused on a data stream processing systems, especially for classification purposes. One of the key problems in this area, which must be addressed is a concept drift, i.e. a change in data characteristics over time. Its appearance cases system deterioration and obsolesce. Therefore its detection and triggering respective reaction are essential for maintaining high system quality. Therefore, I find two aspects of Dr Basterrech's prospective project especially important and interesting. Namely: designing time-dependent neural network topology, and application of drift detection methods. Such a flexible system which evolves in time can become a remedy for a course of mass data, although its effectiveness is very hard to achieve. Merging adaptation of neural network topology with drift detection is a definitely new and original approach and personally I am convinced that it might result in very well working system.

In behalf of me and all my colleagues from my research team in Wroclaw University of Science and Technology I would like to ensure, that we would like to collaborate with Dr Basterrech in his new project with a pleasure. We will support him sharing our knowledge and experience considering this collaboration mutually profitable.

Kind regards

Konrad Jackowski