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Jan. 26, 2017

To whom it may concern:

I am the PhD advisor of Geoffrey Iyer at the University of California, Los Angeles (UCLA). Part of this PhD is co-supervised by Professor Jocelyn Chanussot, at GIPSA-Lab, Grenoble Institute of Technology, France.

The work of Mr. Iyer aims at defining a theoretical framework for the processing and analysis of multimodal data. While this challenging issue has been addressed in a number of applications in the past decades, some theoretical advances are still needed by the community to reach a generic model. Geoffrey first considered a graph-based approach for the analysis of multimodal images, with the strong assumption that the data is already co-registered and resampled. One key issue consists in taking full advantage of the different modalities, trying to identify the meaningful non-redundant part of information. This seminal work should lead to a first publication in 2017. The next step of the PhD will consist in relaxing the co-registration assumption and in considering different strategies based on manifold learning and manifold alignment, in order to match the information coming from different modalities in a common feature space, and then use tools derived from geometry of information to analyze the data and, again, identify the meaningful non-redundant part of information.

We expect this part of the PhD to be conducted in France, at the GIPSA-Lab, Grenoble Institute of Technology, during the 2017-2018 academic year. During his stay in France, he would be directed by Professor Chanussot with input from me. He would also have the opportunity to work in close relation with Professor Christian Jutten who is a world recognized expert on source separation and multimodal signal and image processing.

My scientific relations with the group of Professor Chanussot informally started in 2013 and we already have a few joint papers published in international conferences. This project is our first joint PhD supervision and our most ambitious collaboration to date. The success of this project will be a milestone and should allow us to further strengthen our relations. In particular, this will allow us to prepare joint applications to NSF-sponsored bilateral international projects.

In summary, I would like to stress the scientific value and outstanding skills of Geoffrey Iyer. He has a very strong background in pure mathematics and immediately seized the importance of the addressed problems. He is a very talented young researcher and spending a year in France will be critical not only for the scientific interest, but also to help him develop his international network.

For the success of this project, the support from the Chateaubriand Fellowship Program will be of the utmost importance. I thank you in advance for your attention.

Should you have any question, please feel free to contact me,

Sincerely,

Andrea Bertozzi
Betsy Wood Knapp Chair for Innovation and Creativity
Professor of Mathematics
Director of Applied Mathematics
Fellow of the American Academy of Arts and Sciences
Fellow of the American Physical Society, the American Mathematical Society and the Society for Industrial and Applied Mathematics
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