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Computational Biologist trained as a microbiologist (Université de Bordeaux), I hold a Ph.D. from the University of Zurich. Since 2017, I am a CNRS researcher in the Laboratoire des Sciences du Numérique de Nantes (LS2N - CNRS UMR 6004). My main research interest lies in understanding complex microbial communities and their structures at different levels of organization (from genes to species to ecosystems) in various habitats, including the human intestinal tract but also the world's oceans. We use comparative and functional (meta-)genomics to reveal universal patterns conserved across the microbial tree of life as well as Systems Ecology approaches to understand natural community assembly rules at the functional level. By building computational models we try to gain predictive understandings of community function and dynamics through metabolic modeling, and acquire a mechanistic understanding of microbial species interactions and ecosystem functioning.

Too often, viruses are simply not considered when modeling microbial species interactions and ecosystem functioning, although they play a central role in shaping and dynamically modulating the structure of microbial communities. This was one of the motivations for visiting Professor Hiroyuki Ogata, whom I have originally met few year ago (2012) in the context of the Tara Oceans consortium in which we are both active members.

This one-month visit to his lab has allowed me to further our collaborations in various projects:

- The potential reprogramming of microbial metabolism by viral auxiliary metabolic genes, in collaboration with Prof. Ogata.
- The role of (giant) marine viruses in the biological carbon pump at global scale, in collaboration with Hiroto Kanecho and Dr. Romain Blanc-Mathieu (Ogata lab).
- The development of a novel pipeline for the reconstruction of human gut metagenome-assembled bacterial and viral genomes, in collaboration with Hiroki Nishiyama (Ogata lab).
- The graph-based modeling and structural analysis of human gut microbiota species interaction networks in health and disease, in collaboration with Yasutaka Kato (Ogata lab).

I am very grateful to Prof. Ogata who gave me the opportunity to exchange and interact with him and his team in all these interesting projects and I hope these collaborations will continue in the future as well as foster new collaborations towards understanding the viral influence on our microbial world. This trip has also allowed me to get a glimpse on the incredible Japanese culture and the natural beauty of this country.



Finally, I wish to express my gratitude and sincerely acknowledge the financial support from the ICR Young Researcher Short-Term Exchange Program that has allowed to fully covered this one-month research stay. Again, I would like to express my gratitude and very much thank Professor Ogata and his team for their heartwarming welcome, which just made me want to come back to Japan!