Title: Random Forests and Variants
Seminar: Wednesday 13th July 2016.
Location: Sala de Seminario LEO-SCIAN-Lab, Programa de Anatomía y Biología del desarrollo , 2do piso, Sector A, Facultad de Medicina, Universidad de Chile.

Abstract: Random Forests (RF) are a family of classifier ensemble methods that use randomization to produce a diverse pool of tree-based classifiers. Since introduced in 2001 by Leo Breiman, RF have been extensively studied, both theoretically and experimentally, and have shown competitive performance with state of the art classifiers. However, only a few studies have addressed the issues raised by the choice of the hyper-parameters and their influence on RF performance.
In this talk, I will present our attempts in better understanding and explaining the performance of RF through their hyper-parameters that have led us to propose different variants of RF, namely Forest-RK and Dynamic Random Forests, to be less sensitive to the choice, sometimes critical on the generalization performance, of the parameterization. I will also present another variant of RF, One-Class Random Forests, to deal with outliers in medical image classification.

Bio:
Laurent Heutte received his Ph.D. degree in Computer Engineering from the University of Rouen, France, in 1994. From 1996 to 2004, he was an Assistant Professor in Computer Engineering and Control System at the University of Rouen. Since 2004, he has been a Full Professor in the same university where he is currently the Head of the "Document and Learning" group in LITIS lab. Professor Heutte's research interests are statistical pattern recognition and multiple classifier systems applied to off-line cursive handwriting analysis and recognition, handwritten document layout analysis, information extraction from handwritten documents and image classification.