Kernel design and learning

Jean-Philippe VERT

Abstract:
Soon after the invention of support vector machines and kernel methods in machine learning, it was realized that the "kernel trick" opened wide possibilities to apply these methods to data with particular structures. The last 10 years witnessed an intense activity of "kernel design" for various data, triggering many successful applications of kernel methods in bioinformatics, natural language processing or image processing, to name just a few. With the increasing quantity of possible kernels, some researchers have also considered more recently the possibility to "learn" a kernel, instead of designing it. In this talk I will review some of these developments, and describe several challenges that need to be addressed now.