Title: Solving large-scale discrete quadratic optimization problems

Speaker: Pietro Belotti (FICO)

Abstract:

There is a rising number of industrial applications that can be effectively modelled as optimization problems where the objective function or the constraints are quadratic. Many such problems also have discrete components that require binary or integer variables. The resulting class of Mixed-Integer Quadratically Constrained Quadratic Programming (MIQCQP) problems has been the subject of research for a few decades and several commercial solvers can now solve real-world MIQCQP instances with thousands of variables and constraints. We discuss some algorithmic aspects that help tackle such problems efficiently and show some supporting computational results.