

**Title:** Optimisation in two-sided matching markets

**Abstract:** Centralised matching schemes have been established since 1952 to allocate residents to hospitals, students to schools/universities or courses, and kidney donors to recipients, just to mention a few examples. The underlying matching problems have been extensively studied by economists, computer scientist and mathematicians, and many of these researchers also got involved in the design of the allocation mechanism.

In this talk we will discuss three applications: the Scottish resident allocation, the Hungarian higher education admissions, and a project allocation at Corvinus University. Each application had some special features that made the corresponding problems computationally hard, so in the design of the matching algorithms we took an engineering approach, we developed sophisticated heuristics and used also integer programming techniques.