Intelligent logistics for bike sharing through "dynamic pricing"

The problem could be solved or reduced by a dynamic pricing system which would take into account such imbalances. At the Automatic Control Laboratory at ETH, an algorithm dealing with the problem has been developed. However, the algorithm has been applied only under the assumption that demand is static, which is not realistic. With the agent-based simulation MATSim, developed at the IVT, one can model the demand for bike sharing based on the attributes of the system. The coupling of these two approaches is, however, on various levels a challenge.

The aim of the work is to simulate bike sharing demand with MATSim and test various pricing systems, including dynamic pricing, trying to find out how the redistribution problem could be solved or at least mitigated.

Candidates should have prior experience in operations research and have substantial programming skills.