

# Search space reductions in large neighbourhoods in combinatorial optimisation

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In this talk we will discuss several different representations of solution spaces for combinatorial optimisation problems. We will then discuss examples of very large neighbourhoods generated by mimicking human attempts in improving solutions and also some graph theoretical approaches to reduce the complex problem of searching an exponential neighbourhood. Current limitations of such graph based approaches will be discussed for future directions of research and we will also talk about use of gamification for solving difficult optimisation problems through for crowdsourcing.