Master Thesis Proposal

Revenue Management with Limited Demand Information

Airline revenue management is concerned with identifying the maximum revenue seat allocation policies. Traditional research models and analyses rely heavily on the use of demand information. In contrast, policies that are developed using competitive analysis of online algorithms guarantee a certain performance level under all possible demand scenarios. The objective is to derive a booking policy that guarantees the largest possible percentage of the optimum revenue, for any demands and request sequence. Despite the need for these robust methods in the airline industry, research in this direction has been scarce. In this thesis, revenue management policies should be presented from the perspective of on-line algorithms.

The objective is to

- review and classify existing solutions to the booking problem that use competitive analysis of online algorithms,
- identify opportunities for improvement of current models with respect to e.g. specific practice needs, or demand information available,
- develop a model/policy to solve the on-line booking problem,
- demonstrate the applicability of the proposed approach in a meaningful example or a systematic numerical study.

Recommended Basic Literature


and the references therein.