Maintaining the Utility of Privacy-Aware Schedules

Ali Kaan Tutak, Stephan A. Fahrenkrog-Petersen,
Arik Senderovich, J. Christopher Beck, Matthias Weidlich

Context

- Schedule-driven systems are pervasive
- Published schedules are the basis for system improvement

Problem

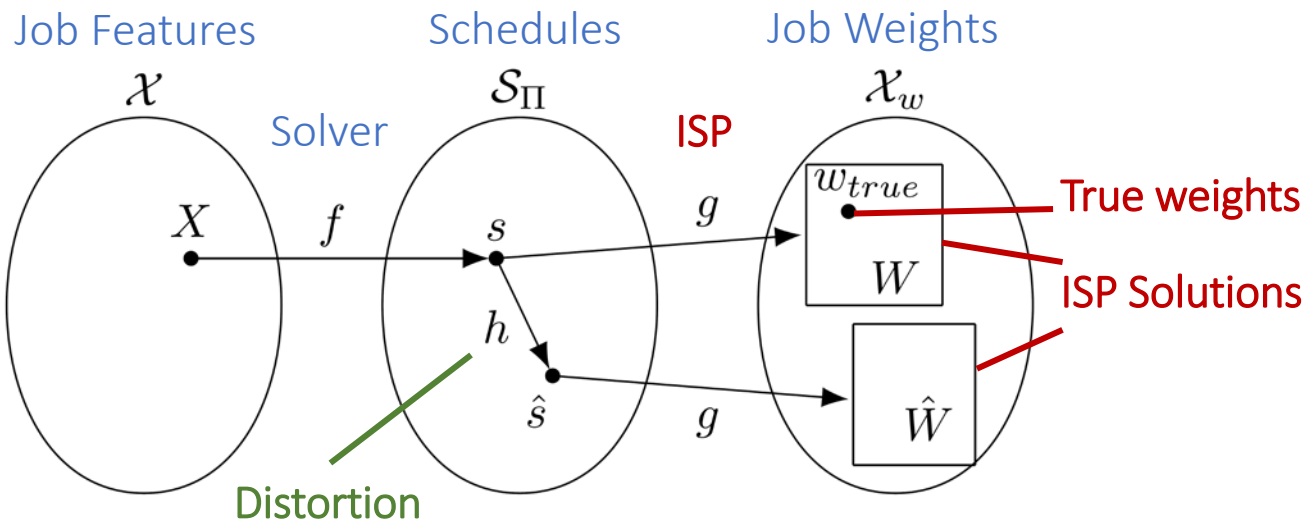
- Published schedules may leak private information
- Trade-off between utility for analysis and privacy preservation

Contribution

- Definition of an attack as an inverse scheduling problem (ISP)
- Formulation of the attack as a constraint satisfaction problem
- Privacy-and-utility protection framework to reduce the inflicted damage

Considered scheduling problem:

- n jobs on single machine
- Job features: processing times and weights
- Objective: min total weighted completion time



HUMBOLDT-UNIVERSITÄT ZU BERLIN
UNIVERSITY OF TORONTO