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Chuwen Zhang

Education

The University of Texas at Austin

- **M.S. in Operations Research, June 2017**

Major fields in mixed integer programming and applications in supply chain management. Advisor, Jonathan F. Bard

Shanghai Jiao Tong University

- **B.E. in Industrial Engineering, June 2015**

Professional Experience

Cardinal Operations, Algorithm Engineer (Operations Research)

`September 2018 - Present`

Large-scale MILP algorithm design for production planning

- Developed a very large-scale (17m constraints and 19m variables) planning model for a global ICT gaint to tackle difficulties in delivery requirements.
- Designed an LP-based iterative procedure to decompose the full problem including various pre and post processing techniques, graph-based heuristics to deal with integral and hard features. The model has been deployed and used in real production.
- Extended the model as a S&OP and APS product tailored for manufacturing industry.

Planning models for air-cargo operation

- Implemented MILP, mixed integer SOCP programs for an aircraft position assignment problem that optimizes allocations for incoming cargo planes to minimize the total processing time needed for air cargo transfers.
- Applied a geometric rounding scheme for the assignment constraints to achieve a 10% optimality gap comparable to 8% gaps obtained by mixed integer programs within 1 hr.

RTBAsia, Data Scientist

`September 2017- August 2018`

Machine learning models for advertising fraud detection

- Designed online (streaming) and offline machine learning pipelines for invalid traffic detection with implementation in Spark and Kafka
- Researched on DL-based (CV + NLP) models to evaluate Ad context (URL, for example) for digital marketing, and to protect brands from unsafe, inappropriate, or incompatible content.

Skills

Proficient: Python, Julia, Pandoc, Scala, Spark.

Past experience/collaborative use: C++, HTML5/CSS, Unix, Haskell, JavaScript, LaTeX, TensorFlow.

Modeling: JuMP, Mosek, Gurobi, COPT, CLP, Spark ML.

Summary: proficient in linear, conic, and mixed integer optimization, and methods for large scale applications with real-world practices. Familiar with common machine learning algorithms and experienced in modeling pipeline in big data environment..

Publications

Chuwen Zhang, Jonathan F Bard, and Rodolfo Chacon, Controlling work in process during semiconductor assembly and test operations, *International Journal of Production Research* 55, no. 24 (2017): 7251–7275