YU WANG

IN TECH WE TRUST

Bentonville, AR 72712, USA

(951) 878-0817 | wy.work.us@gmail.com | farheart

Summary

- Expert in applying operations research and data analytics to solve real business problems
- Skilled software developer and architect. Proficient in multiple programming languages, libraries and tools
- Experienced technical lead and project manager. Excellent interpersonal skills

Experiences

Walmart Inc.

Bentonville, AR

PRINCIPAL DATA SCIENTIST – LEVERAGE ADVANCED ANALYTICS TO OPTIMIZE SUPPLY CHAIN OF WALMART US

Apr 2018 - Present

- **Dock-out Balancing of Distribution Centers (DC)**
  - Utilize optimization techniques (*C++, CPLEX, Python*) to balance dock-out workload of DC under multiple constraints (store delivery time windows, noise ordinance, etc.)
- **Store-to-DC Alignment Optimization**
  - Created a webapp to support DC-to-store alignment, with goals of minimizing transportation cost and avoiding unnecessary/undesired impacts. (Model: *C++, CPLEX, Python*, UI: *Python [Django], JavaScript [RequireJS, D3.js]*)
- **Return Decison Module (RDM)**
  - In charge of middle-ware of RDM – a decision support tool helping handle the merchandise return in the most economical way. (*Java [Tomcat, Spring, Camel, ActiveMQ, Jersey, Guice, Dozer], SQL [DB2, SQL Server, TeraData]*)

CSX Transportation Inc.

Jacksonville, FL

SR. MANAGER OF OPERATIONS RESEARCH – DEDICATED TO DEVELOPMENT OF INTEGRATED DECISION SUPPORT SYSTEM FOR RAILROADS

Mar 2012 - Apr 2018

- **Train Planner**
  - Combined optimization, data-mining, and simulation to create a web-based decision support tool to schedule / simulate / visualize the meet-and-pass (time & location) of line-of-road trains
  - Used widely by various departments of CSX – Service Planning: test and evaluate new plans; Engineering: find proper time windows for maintenance; Network operation: perform capacity and impact analysis, etc.
- **Line-of-road Emulator**
  - Created a tool to help managers identify network bottlenecks and evaluate impacts by dynamic visualization. Data pre-loading and caching modules are developed to improve running efficiency and user experiences
  - Provided two levels of view to monitor train movements on GIS map
    - Macro view overlooks the whole network, finds and marks out problematic trains (e.g., slow or long-dwelled). It was used to illustrate how congestion happened on the northern tier corridor in 2014 winter to the executive team and board members, and received high appreciation and wined CSX Spotlight award
    - Micro view zooms to local and shows trains as moving strips, which enables users observing more details en route. It was used to analyze the blockage to local road traffic in Elsdon, IL to dispute the accusation from TRB
- **Hump Yard Simulation System (HYSS)**
  - Project manager. Developed data feeding module. Designed and performed statistical tests to validate output of HYSS, which consists of 6 hump yard models simulating their processes on receiving, classifying and departing
  - Assisted network modeling team using HYSS to perform various what-if analysis and to make strategic and tactical decisions (e.g., planning track utilization and right-sizing of yard resources)

COFCO Group

Beijing, China

SOFTWARE ENGINEER – DESIGNED AND DEVELOPED J2EE-BASED WEBAPPS

Jul 2003 – Jul 2005

- **Agricultural Information Subscribing Platform**
  - Developed an information providing system that allows users subscribing agricultural information via cellphone short-messages (collaborative project between COFCO, CCTV-7 and China National Radio)
- **Employee Satisfaction Survey System**
  - Designed and developed web-based survey system for COFCO HR. Used in 2005 and 2006 at COFCO headquarter and its two subsidiaries (∼500 employees involved) .

Education

2011	**Ph.D.**, Operations Research, University of Pittsburgh	Pittsburgh, PA
2003	**M.S.**, Mechanical Engineering, Tsinghua University	Beijing, China
2000	**B.S.**, Mechanical Engineering, Tsinghua University	Beijing, China

Technical Skills

Modeling

Simulation	Agent-based [**AnyLogic, RePast**], Discrete-event [**Arena, Simio**]
Optimization	MILP [**ILOG CPLEX, Gurobi**], Heuristics
Data-mining	Algorithm [**Regression, Decision-Tree, ANN, SVM, k-Means, DBSCAN**], Tools [SAS® Enterprise Miner)]
Forecasting	Time series [**SAS® Forecasting Studio, R**]
Miscellaneous	Visualization [**Tableau**], Statistics [**R, Minitab**], Big data [**Spark, Hadoop**]

Programming

C++/C/C#	[**STL, SWIG**], IDE [**Visual Studio, Eclipse CDT**]
Java	Web [**J2EE/JSP/JSF, Tomcat**], Frameworks [**Spring, Struts, Camel, ActiveMQ, Jersey, Guice, Hibernate**], IDE [**Eclipse**]
Python	Data-mining [**Scikit-learn, Pandas**], Computer Vision [**OpenCV**], Network Analysis [**Networkx**], Web [**Django, Flask**]
JavaScript	Web[**jQuery, Node.js**], Visualization [**Highcharts, D3.js, Bootstrap**], MVVM [**AngularJS**]
Database	RDBMS [**MS SQL Server, Oracle, DB2, PostgreSQL, MySQL, TeraData**], Geography [**ArcGIS, QGIS, PostGIS**]
Miscellaneous	VBA, VB/Basic, Delphi/Pascal, Fortran, Matlab, Shell Scripting (Unix/Linux)

Professional Contributions

Selected Papers (first-author only)

- **Yu Wang**, K. Louis Luangkesorn, and Larry Shuman. "Modeling emergency medical response to a mass casualty incident using agent based simulation." *Socio-Economic Planning Sciences* Vol.46, No.4, p281-290, 2012
- **Yu Wang**, Louis Luangkesorn, and Larry J. Shuman. "Best-subset selection procedure." In *Simulation Conference (WSC), Proceedings of the 2011 Winter*, p4310-4318, IEEE, 2011.
- **Yu Wang**, Haiyan Zhao, Su Wu, et al. "Establishment of segmented moving double ellipsoid heat source model in electron beam welding numerical simulation." *Chinese Journal of Mechanical Engineering*, Vol.40, No.2, p165-169, 2004
- **Yu Wang**, Su Wu, Haiyan Zhao, et al. "An investigation on the shape parameters of double ellipsoid heat source model in numerical simulation of high energy beam welding." *Transactions of the China Welding Institution*, Vol.24, No.2, p67-70, 2003

Presentations on INFORMS Annual Meetings

- Train Planner. *Houston, TX*, 2017
- CSX Line-of-Road Simulation. *Nashville, TN*, 2016
- Development and Application of Line-of-road Emulator Tool in CSX. *Philadelphia, PA*, 2015
- Predict Congestion Status of a Hump Yard using Data-mining. *Minneapolis, MN*, 2013
- An Agent-based Simulation for Emergency Response Policy Evaluation & Selection. *Austin, TX*, 2010

Honors & Awards

CSX	**Spotlight Awards**,	2015
UPitt	**Graduate Scholarship**,	2005 - 2011
Tsinghua	**Outstanding Thesis Award (One of 3 winners in 110 graduates)**,	2003
Tsinghua	**GuangHua Scholarship for Academic Excellence - Prize I**,	2001
Tsinghua	**Graduate with Honor**,	2000