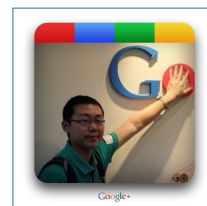# Weizhi Liu

Curriculum Vitae

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"Impossible is nothing if you dare to challenge !"

Education

2014.08–now	**Ph.D. Student**, *National University of Singapore*, Singapore.
2010.09–2014.06	**B.Eng. - Industrial Engineering**, *Nanjing University*, China.
2010.09–2014.06	**B.Ec. - Financial Engineering**, *Nanjing University*, China.

Awards

2013.02	INFORMS Prize Recipient, The Mathematical Contest in Modeling (0.05%)
2013.02	Outstanding Winner, The Mathematical Contest in Modeling (0.2%)
2011.07	Secondary Prize, Google Summer Students Blog Share Competition (0.3%)
2011/2012	Outstanding Volunteer, the $4^{th}/5^{th}$ Google Warm China Cup
2011.12	Top2, the 2nd Nanjing "JinWeiNing Inc" Logistics and Supply Chain Innovation Competition (5%)

Experience

Academic Experience

2012.07–2012.09	**An investigation of "City 100 Logistics Inc, Beijing" concerning jointly distribution**.
2013.04–2013.05	**An experiment study of Supply Chain Contract concerning Stackelberg Games and Bilateral Bargaining Games**.

Extra-curricular

2011.09–2012.09	**President**, *Google Camp*, Nanjing University. Invite some geeks to come to lectures and seminars, organize wonderful competition of Google such as Android App Competion and Warm China Cup and organize visits to Google Inc.
2011.07–2012.09	**Vice President**, *Students Research Training Program Association* , Nanjing University. Invite some experienced seniors to give seminars and host the summit of innovation @NJU.

Computer skills

Basic	Emacs, Netlogo, C++

Intermediate	R, Git, z-tree, LaTeX
Advanced	Python, Matlab, Octave

Interests

- Complex System	- Artificial Intelligence
- Machine Learning	- Investment
- Optimization	- Simulation
- Coding	- Algorithm
- Formula One	- Science Fiction
- Cooking	- Badminton
- Chess	- Go

Publications

Title	*A Partition-based Random Search for Stochastic Multi-objective Discrete Optimization via Simulation*
Supervisors	A/Prof. Lee Loo Hay
Published in	Working Paper
Description	– Binary tree with nodes as partition rule is used to represent the strucutre of nested partitions.
	– Uniform sampling is implemented to collect information for each regions.
	– Most promising region is selected by comparing the promising index (average of domination count) of each region.
	– Partition the node of binary tree, which represents current most promising region.

Title	*Optimal Computing Budget Allocation to Select the Non-dominated Systems - a Large Deviations Perspective*
Supervisors	A/Prof. Lee Loo Hay
Published in	Working Paper
Description	– Rate of probability of false selection considering multi-objective ranking & selection problem is proposed.
	– Optimal budget allocation strategy is derived by solving the non-convex optimization which maximizes the rate as a function of allocation proportion.
	– Global optimal allocation strategy is proposed by decompoing the non-convex optimization into a set of convex optimization.
	– Numerical experiments show the newly proposed strategy (MOCBA+, MOCBA*) performs better than previous MOCBA.

Title	*Make Wise Use of Every Drop*
Supervisors	A/Prof. Li Juan & A/Prof. Qu Hui
Published in	Mathematical Modeling And Its Applications, Volume 2, 2013

Description	– Outstanding Winner(0.2%) and INFORMS Prize Award(0.05%) in 2013 Mathematical Contest in Modeling[1] held by COMAP, sponsored by INFORMS, MAA, and SIAM.
	– A grey prediction model was used to predict water gap between demand and supply across China during 2013∼2025.
	– Four rigorous models are proposed to address water transfer, water storage, desalinization and water conservation to handle the severe water shortage issues.
	– Interplay between four strategies is analyzed, namely whether they are substitutes or complements in terms of water demand uncertainty and area properties.

Title	*Joint Distribution Center Model in University Community*
Supervisors	Prof. Zhou Jing & Dr. Li Min
Published in	China Business and Trade, Issue 6, 2013
Description	– Achievement of our "National Students Research Training Program" concerning joint distribution center and the last mile problem.
	– Scales, densities, locations, operations and profit model of joint distribution center have been studied roughly.

Title	*Verification of Option Parity Relations in Domestic Warrants Market of China*
Supervisors	A/Prof. Zhu Hongliang
Published in	2013 International Conference on Education and Education Management
Description	– An empirical study of option parity relations in domestic warrants market of China has been analyzed.
	– Black-Scholes Model has been used to adjust the call price to make the strike price of call/put option equivalent.
	– A linear regression model and wilcoxon signed-rank test have been conducted to verify the parity relations.

Title	*How Social Preference and Bounded Rationality Effects Pricing on A Supply Chain*
Supervisors	A/Prof. Li Juan
Published in	Working Paper

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[1]The description of **MCM 2013 Problem B: Water, Water, Everywhere** can be viewed in `http://www.comap.com/undergraduate/contests/mcm/contests/2013/problems/`

Description – A two-echelon supply chain with a supplier as Stackelberg Game's leader and a retailer as follower has been analyzed.

– A utility model and multinomial logit choice model have been adopted to capture people's social preferences and bounded rationality.

– Apart from theoretical analysis, A/Prof. Li Juan, A/Prof. Wang Yulan Amanda and I have conducted a series of economic experiments to collect real decision data.

– Structural estimation and some hypothesis tests were conducted via software R. Learning effect and bullwhip effect will be studied later.