

Sahar Tahernejad

CONTACT INFORMATION	200 W. Packer Ave. Industrial and Systems Engineering Lehigh University Bethlehem, PA 18015 USA	Cell: 610-608-1946 sat214@lehigh.edu http://coral.ise.lehigh.edu/sat214/
RESEARCH INTERESTS	Discrete optimization, multi-level optimization, stochastic optimization, computational optimization, scheduling	
EDUCATION	Lehigh University , Bethlehem, Pennsylvania USA Ph.D., Operations Research, <i>Expected:</i> Aug. 2019 <ul style="list-style-type: none">• Research Topic: <i>Mixed-integer bilevel optimization</i>• Advisor: Theodore K. Ralphs• GPA: 3.78/4 Sharif University of Technology , Tehran Iran M.S., Industrial Engineering, Sept. 2012 <ul style="list-style-type: none">• Thesis: <i>Train scheduling on a two-way and single track railway line considering the train stops for prayer</i>• Advisor: Nasser Salmasi• GPA: 18.34/20 Sharif University of Technology , Tehran Iran B.S., Industrial Engineering, Sept. 2010 <ul style="list-style-type: none">• Thesis: <i>Investigation of imperialist competition algorithm</i>• Advisor: Nasser Salmasi• GPA: 17.85/20	
SOFTWARE	<ul style="list-style-type: none">• MibS: Open-source solver for mixed integer bilevel optimization problems (COIN-OR project)	
PROFESSIONAL EXPERIENCE	<ul style="list-style-type: none">• Operations Research fellow at SAS institute, Operations Research Development division, Cary, NC Jun. 2017 to Aug. 2017• COIN-OR organization member	
COMPUTER SKILLS	<ul style="list-style-type: none">• Operating Systems: Unix/Linux (Debian, Arch Linux), Windows• Programming languages: C/C++, Parallel computing with OpenMP and MPI, Objected-oriented programming, Bash scripting, AWK, Python, MATLAB• Linear algebra packages: BLAS, Intel Math Kernel Library, LAPACK• COIN-OR projects: MibS, SYMPHONY, CHiPPS, CLP, CBC, CGL, OSI• Big data computing framework: Apache Spark	

- Mathematical modeling: AMPL, GAMS
- Optimization solvers: GUROBI, MOSEK, SeDuMi, CPLEX
- Statistical Packages: R, Minitab, SAS
- Simulation: Rockwell Arena

PROJECT
EXPERIENCE

- Study on polytope separator for binary classification in machine learning May. 2016
- Implementation of a branch-and-cut algorithm for integer bilevel optimization problems in SYMPHONY in C Dec. 2015
- Clustering users and movies on the Movie Lens data by using Apache Spark computing framework Dec. 2015
- Approximation of value function with least squares policy evaluation algorithms for robot navigation problem Dec. 2015
- Implementation of Conjugate Gradient (CG) method for large systems of equations by employing MPI Nov. 2015
- Implementation of revised simplex algorithm by employing the product form of the inverse method (PFI) and Bartels-Golub approach in C++ Nov. 2015
- Implementation of a line search and trust region based optimization package for unconstrained nonlinear optimization in MATLAB Apr. 2015
- Implementation of a dictionary class with different operations in Python Apr. 2015
- Implementation of the parallel Strassen's algorithm in a sparse matrix class by employing OpenMP in C++ Mar. 2015
- Implementation of spatial branch-and-bound algorithm with disjunctive cuts for non-convex MINLP in Python Dec. 2014
- A review of the s-monotone index selection rules for pivot algorithms of linear programming Dec. 2014

AWARDS

- Best Poster Award of Mixed Integer Programming Workshop (Honorable mention), Clemson University and the Clemson Operations Research Institute Jun. 2018
- Rossin Doctoral Fellow, College of Engineering, Lehigh University Apr. 2017
- Van Hoesen Family Best Publication Award, Industrial and Systems Engineering, Lehigh University Apr. 2017
- Dean's Doctoral Assistantship, Industrial and Systems Engineering, Lehigh University Sept. 2014
- Direct entrance to graduate studies as a talented student by Dean of Sharif University

	of Technology with full scholarship	Sept. 2011
	<ul style="list-style-type: none"> • 263rd in the Nationwide University Entrance Examination in Mathematics and Physics Field(among more than two million students) 	Sept. 2006
REFEREED JOURNAL PUBLICATIONS	<ul style="list-style-type: none"> • Tahernejad, S., Ralphs, T.K. and DeNegre, S.T., 2016. A branch-and-cut algorithm for mixed integer bilevel linear optimization problems and its implementation. Under second review in Mathematical Programming Computation 	
PAPERS IN PREPARATION	<ul style="list-style-type: none"> • Tahernejad, S., Ralphs, T.K., Valid Inequalities for Mixed Integer Bilevel Optimization 	
TALKS	<ul style="list-style-type: none"> • Valid inequalities for mixed integer bilevel linear optimization problems, COR@L seminar, Lehigh University. • A Branch-and-cut algorithm for mixed integer bilevel linear optimization problems and its implementation, Informs Annual Meeting, Houston TX • Two-stage mixed integer linear optimization with concentration on bilevel optimization, COR@L seminar, Lehigh University. • MibS solver for integer bilevel optimization problems, Informs Optimization Society Conference, Princeton University. • Integer bilevel linear optimization problems, COR@L seminar, Lehigh University. • Branch-and-cut algorithm for integer bilevel linear optimization problems, Informs Annual Meeting, Philadelphia. 	<p>Dec. 2017</p> <p>Oct. 2017</p> <p>Oct. 2016</p> <p>Mar. 2016</p> <p>Jan. 2016</p> <p>Nov. 2015</p>
ACADEMIC EXPERIENCE	<p>Teaching Assistant</p> <ul style="list-style-type: none"> • Simulation Industrial and Systems Engineering Department Lehigh University <p>Teaching Assistant</p> <ul style="list-style-type: none"> • Optimization models and applications Industrial and Systems Engineering Department Lehigh University <p>Teaching Assistant</p> <ul style="list-style-type: none"> • Information systems analysis and design Industrial and Systems Engineering Department Lehigh University <p>Teaching Assistant</p> <ul style="list-style-type: none"> • Material handling and facility planning Industrial and Systems Engineering Department Lehigh University 	<p>Jan. 2016 to May 2016</p> <p>Sept. 2015 to Dec. 2015</p> <p>Jan. 2015 to May 2015</p> <p>Sept. 2014 to Dec. 2014</p>

RELEVANT COURSE WORK

Lehigh University
Integer optimization, Mathematical optimization, Convex optimization, Nonlinear optimization, Computational methods in optimization, Conic optimization, Optimization methods in machine learning, Mining massive datasets, Dynamic Programming

Sharif University of Technology
Operations research I and II, Graph theory, Sequencing and scheduling theory, Discrete events simulation

LANGUAGES

Persian (Native)

English (Fluent)

- Excellent in communication skills

REFERENCES

Theodore K. Ralphs
Professor
Department of Industrial and Systems Engineering
Lehigh University
Phone: (610)628-1280
E-mail: ted@lehigh.edu

Katya Scheinberg
Professor
Department of Industrial and Systems Engineering
Lehigh University
Phone: (610)758-4039
E-mail: katyas@lehigh.edu