

LIAM Y. HSIEH

Postdoctoral Researcher
Department of Systems Engineering & Operations Research
George Mason University
Tel: (703) 831-7920
E-mail: liahmsieh@ieee.org
Web: <http://liahmsieh.info>

EDUCATIONS

- Ph.D., National Tsing Hua University**, Hsinchu, Taiwan 2014
Industrial Engineering and Engineering Management
Thesis: "Metamodel-based Frameworks for Stochastic Optimization"
- M.Sc., Chaoyang University of Technology**, Taichung, Taiwan 2005
Industrial Management
Thesis: "A Bargaining Agent with Bayesian Learning for an Online Used-Book Store"
- B.Sc., Feng Chia University**, Taichung, Taiwan 2003
Industrial Engineering

PROFESSIONAL EXPERIENCE

- Postdoctoral Researcher** 2015-present
System Engineering & Operations Research Dept., George Mason University, VA, USA
- Senior Consultant** 2013-2015
GiantSoft Inc., Hsinchu, Taiwan
- Supply Chain Management Consultant** 2012-2013
AdvancedTEK International Corp., Shanghai, China
- Senior Engineer** 2007-2011
Industrial Engineering, ProMOS Technologies, Taichung, Taiwan
- Engineer** 2006-2007
Production Control, ProMOS Technologies, Taichung, Taiwan
- Supervisor** 2005-2006
Manufacturing, ProMOS Technologies, Taichung, Taiwan

HONORS AND AWARDS

- K.D. Tocher Medal** 2017
(Operational Research Society)
- Senior Member** 2017
(The Institute of Electrical and Electronics Engineers (IEEE))
- Award Recipient of Postdoctoral Research Abroad Program** 2014
(Ministry of Science and Technology, Taiwan)
- Winner of Annual EIP competition** 2008
(ProMOS Technologies, Taiwan)

PEER-REVIEWED JOURNALS

- Robert Cuckler, Kuo-Hao Chang, [Liam Y. Hsieh](#) (2017), "Optimal Parallel Machine Allocation Problem in IC Packaging Using IC-PSO: An Empirical Study," *Asia-Pacific Journal of Operational Research* (Accepted).

- Liam Y. Hsieh, Edward Huang, Chun-Hung Chen (2017), "Equipment Utilization Enhancement in Photolithography Area Through a Dynamic System Control Using Multi-Fidelity Simulation Optimization with Big Data Technique," *IEEE Transactions on Semiconductor Manufacturing*, 30(2), 166-175.
- Jie Xu, Edward Huang, Liam Y. Hsieh, Loo Hay Lee, Chun-Hung Chen (2016), "Simulation Optimization in the New Era of Industrial 4.0 and Industrial Internet," *Journal of Simulation*, 10(4), 310-320.
- Liam Y. Hsieh, Edward Huang, Si Zhang, Kuo-Hao Chang, Chun-Hung Chen (2016), "Application of Multi-Fidelity Simulation Modeling to Integrated Circuit Packaging," *International Journal of Simulation and Process Modelling*, 11(3/4), 259-269.
- Kuo-Hao Chang, Liam Y. Hsieh (2016), "Determination of Wafer Start Mix in Semiconductor Manufacturing during New Technology Ramp-Up: Model, Solution Method and an Empirical Study," *IEEE Transactions on Systems, Man and Cybernetics: Systems*, 46(2), 294-302.
- Liam Y. Hsieh, Kuo-Hao Chang, Chen-Fu Chien (2014), "Efficient Development of Cycle Time of Normal Lots-Percentage of Hot Lots Response Surfaces Using Progressive Simulation Metamodeling," *International Journal of Production Research*, 52(10), 3097-3109.
- Liam Y. Hsieh, Kuo-Hao Chang (2013), "Yield Improvement on In-mold Decoration Manufacturing through Parameter Optimization," *International Journal of Precision Engineering and Manufacturing*, 14(10), 1823-1828.
- Chi-Bing Cheng, Chu-Chai Henry Chan, and Yueh-Feng Hsieh (2007), "Performance Enhancement of Bayesian Learning: An Application Involving the Bargaining Agent of an Online Bookstore," *Journal of the Chinese Institute of Industrial Engineers*, 24(5), 388-396.

CONFERENCE PAPERS

- Ying-Hsuan Lu, Kuo-Hao Chang, Liam Y. Hsieh (2017), "Large-Scale Quantile-based Simulation Optimization Using Efficient Factor Screenings," *4th International Conference on Advances and Management Sciences 2017*, Feb. 12-14, Barcelona, Spain.
- Ying-Hsuan Lu, Kuo-Hao Chang, Liam Y. Hsieh (2016), "Factor Screening Method for Quantile-based Performance Measure," *Proceedings of the Asia Pacific Industrial Engineering & Management Systems Conference 2016 (APIEM2016)*, Dec. 7-10, Taipei, Taiwan.
- Wan-Ting Kao, Liam Y. Hsieh, Kuo-Hao Chang (2015), "Optimal Parallel Machine Allocation in Integrated Circuit Assembly," *Proceedings of the Asia Pacific Industrial Engineering & Management Systems Conference 2015 (APIEMS2015)*, Dec. 8-11, Ho Chi Minh City, Vietnam.
- Liam Y. Hsieh, Chi-Bin Cheng (2015), "Solving an Order Promising and Scheduling Problem in Semiconductor Back-end Testing by Fuzzy Optimization and Genetic Algorithm," *2015 International Symposium on Semiconductor Manufacturing Intelligence (ISMI2015)*, Oct. 16-18, KAIST, Daejeon, Korea.
- Liam Y. Hsieh, Kuo-Hao Chang (2014), "Determining the Optimal Wafer Start Rate in Semiconductor Manufacturing during New Technology Ramp-up," *Proceedings of the Asia Pacific Industrial Engineering & Management Systems Conference 2014 (APIEMS2014)*, Oct. 12-15, Jeju, Korea.
- Liam Y. Hsieh, Kuo-Hao Chang, Chen-Fu Chien (2014), "A Web-based Capacity Planning System for a Semiconductor Wafer Fabrication: Design and Implementation," *2014 International Symposium on Semiconductor Manufacturing Intelligence (ISMI2014)*, Aug. 16-18, Taipei, Taiwan.
- Liam Y. Hsieh, Kuo-Hao Chang, Chen-Fu Chien (2013), "Determining Optimal Hot Lot Percentage in Semiconductor Wafer Fabrication," *Proceedings of 9th International Conference on Intelligent Manufacturing and Logistics Systems & 2013 International Symposium on Semiconductor Manufacturing Intelligence (IML2013 & ISMI2013)*, Feb. 27-Mar. 2, Shanghai, China.
- Liam Y. Hsieh, Kuo-Hao Chang, Chen-Fu Chien, Li-Yuan Yen (2012), "An Effective Scheduling and Dispatching Approach for Cycle Time Reduction in Semiconductor Manufacturing," *International Conference on Innovative Design and Manufacturing 2012 (ICIDM 2012)*, Dec. 12-14, Taipei, Taiwan.
- Liam Y. Hsieh, Chih-Yung Wen, Chen-Yu Li (2012), "A decision model for selecting subsidized electric scooter using SMARTS," *15th Decision Analysis Symposium*, Jan. 7, Hsinchu, Taiwan.

ARTICLES UNDER REVIEW OR IN PREPARATION

- Liam Y. Hsieh, Chi-Bin Cheng, "Efficient Due Date Quoting and Production Scheduling for Integrated Circuit Packaging with Reentrant Processes," under review by *IEEE Transactions on Components, Packaging and Manufacturing Technology*.
- Liam Y. Hsieh, Si Zhang, Jie Xu, Chun-Hung Chen, "A Collective Capacity Planning for a Borderless GigaFab with Capacity Limitation in Cross-fab Transition," (in preparation).

Liam Y. Hsieh, Kuo-Hao Chang, Amna Tahir, Mao-Kai Hsu, " Campaign Planning for Multi-Purpose Batch Plants: A Case Study for Active Pharmaceutical Ingredient Production," (in preparation).

Liam Y. Hsieh, "Throughput Rate Management System for Semiconductor Wafer Fabrication Facilities: Methodologies, Systems and Implementation," invited feature paper for *Processes*.

TEACHING AND MENTORING EXPERIENCE

| | |
|---|-----------------|
| Thesis Supervisor , National Tsing Hua University, Taiwan Ying-Hsuan Lu, M.S. (graduated on July 2017) Wan-Ting Kao, M.S. (graduated on July 2016) Mao-Kai Hsu, M.S. (graduated on July 2015) | Since Fall 2013 |
| Adjunct Instructor , Chien-Hsin University of Technology, Taiwan Under-graduate course, project management, for Dept. of Business Administration | Fall 2013 |
| Consultant , AdvancedTEK International Corp., China Training courses of tailored information systems for customers | March 2013 |
| Internal Instructor , ProMOS Technologies, Taiwan On-job training program, data analytics by SQL and Excel VBA | Summer 2010 |
| Teaching Assistant , Chaoyang University of Technology, Taiwan Under-graduate course, engineering statistics, for Dept. of Industrial Management | Fall 2005 |

ACADEMIC SERVICES

Program/Techinal Committee:

International Symposium on Semiconductor Manufacturing Intelligence, Oct. 16-18 2015, Daejeon, Korea.

4th International Conference on Advances and Management Sciences, Feb. 12-14 2017, Barcelona, Spain.

5th International Conference on Advances and Management Sciences, Feb. 11-13 2018, Torino, Italy.

Review Committee:

International Conference on Mechanical, Electronics and Computer Engineering, Jan. 7-9 2016, New York, USA.

Asia Pacific Industrial Engineering & Management Systems Conference, Dec. 7-10 2016, Taipei, Taiwan.

Journal Referee:

IEEE Transactions on Systems, Man and Cybernetics: Systems

IEEE Transactions on Automation Science and Engineering

IEEE Transactions on Semiconductor Manufacturing

Computer & Industrial Engineering

International Journal of Production Research

Asia-Pacific Journal of Operational Research

Journal of Industrial and Production Engineering

International Journal of Industrial Engineering: Theory, Applications and Practice

Industrial Engineering & Management Systems

IETE Journal of Research

INVITED PRESENTATIONS

"An application of Operations Research for backpackers", (2014) Apr. 8, TKU, New Taipei, Taiwan.

"Applied Statistics in Semiconductor Wafer Fab: some applications", (2013) Dec. 23, CYUT, Taichung, Taiwan.

"Industrial Engineering in IT consulting industries", (2013) May 22, NTHU, Hsinchu, Taiwan.

"Discussions of a case project of SCM", (2013) Mar. 26, TKU, New Taipei, Taiwan.

PROFESSIONAL MEMBERSHIPS

The Institute of Electrical and Electronics Engineers (IEEE)

The Institute for Operations Research and the Management Sciences (INFORMS)

Chinese Institute of Industrial Engineers (CIIE)