Nian-Ze Lee

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Research Interests

- Formal Methods
- Artificial Intelligence
- Electronic Design Automation

Employment

Ludwig-Maximilians-Universität München (LMU Munich)

Postdoctoral Researcher, Institute of Informatics, 2021.10-

- Advisor: Dirk Beyer, Ph.D.

Education

National Taiwan University

Ph.D., Graduate Institute of Electronics Engineering, 2015.09-2021.06

- Advisor: Jie-Hong R. Jiang, Ph.D.

BSE, Electrical Engineering with a minor in Economics, 2009.09-2014.06

Qualification

Visiting Student 2019.09-2020.08
Software and Computational Systems Lab,
LMU Munich, Germany
Supervisor: Dirk Beyer, Ph.D.

Internship Student 2018.09-2019.02
ERATO MMSD Project,
National Institute of Informatics, Japan
Supervisor: Ichiro Hasuo, Ph.D.

Research Intern 2016.07-2016.10
Thomas J. Watson Research Center,
IBM Research, United States
Supervisor: Victor N. Kravets, Ph.D.

Teaching Experience

Teaching Assistant Fall 2020
Logic Synthesis and Verification
Instructor: Jie-Hong R. Jiang, Ph.D.

Teaching Assistant Fall 2018
Logic Synthesis and Verification
Instructor: Jie-Hong R. Jiang, Ph.D.

Teaching Assistant Spring 2016
Introduction to Electronic Design Automation
Instructor: Jie-Hong R. Jiang, Ph.D.

Journal Publications

1. **Nian-Ze Lee** and Jie-Hong R. Jiang, "Constraint Solving for Synthesis and Verification of Threshold Logic Circuits," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 2020.
2. **Nian-Ze Lee** and Jie-Hong R. Jiang, "Towards Formal Evaluation and Verification of Probabilistic Design," in *IEEE Transactions on Computers*, 2018.

Conference Publications

1. **Nian-Ze Lee** and Jie-Hong R. Jiang, "Dependency Stochastic Boolean Satisfiability: A Logical Formalism for NEXPTIME Decision Problems with Uncertainty," in *Proceedings of the National Conference on Artificial Intelligence (AAAI)*, 2021.

2. **Nian-Ze Lee**, Paolo Arcaini, Shaukat Ali, and Fuyuki Ishikawa, "Stability Analysis for Safety of Automotive Multi-Product Lines: A Search-Based Approach," in *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO)*, 2019.

3. **Nian-Ze Lee**, Yen-Shi Wang, and Jie-Hong R. Jiang, "Solving Exist-Random Quantified Stochastic Boolean Satisfiability via Clause Selection," in *Proceedings of the International Joint Conference on Artificial Intelligence and the European Conference on Artificial Intelligence (IJCAI-ECAI)*, 2018.

4. **Nian-Ze Lee**, Victor N. Kravets, and Jie-Hong R. Jiang, "Sequential Engineering Change Order under Retiming and Resynthesis," in *Proceedings of the International Conference on Computer-Aided Design (ICCAD)*, 2017.

5. **Nian-Ze Lee**, Yen-Shi Wang, and Jie-Hong R. Jiang, "Solving Stochastic Boolean Satisfiability under Random-Exist Quantification," in *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, 2017.

6. **Nian-Ze Lee**, Hao-Yuan Kuo, Yi-Hsiang Lai, and Jie-Hong R. Jiang, "Analytic Approaches to the Collapse Operation and Equivalence Verification of Threshold Logic Circuits," in *Proceedings of the International Conference on Computer-Aided Design (ICCAD)*, 2016.

7. **Nian-Ze Lee** and Jie-Hong R. Jiang, "Towards Formal Evaluation and Verification of Probabilistic Design," in *Proceedings of the International Conference on Computer-Aided Design (ICCAD)*, 2014.

8. Siang-Yun Lee, **Nian-Ze Lee**, and Jie-Hong R. Jiang, "Searching Parallel Separating Hyperplanes for Effective Compression of Threshold Logic Networks," in *Proceedings of the International Conference on Computer-Aided Design (ICCAD)*, 2019.

9. Victor N. Kravets, **Nian-Ze Lee**, and Jie-Hong R. Jiang, "Comprehensive Search for ECO Rectification Using Symbolic Sampling," in *Proceedings of the Design Automation Conference (DAC)*, 2019.

10. Siang-Yun Lee, **Nian-Ze Lee**, and Jie-Hong R. Jiang, "Canonicalization of Threshold Logic Representation and Its Applications," in *Proceedings of the International Conference on Computer-Aided Design (ICCAD)*, 2018.

11. Dao Ai Quoc, **Nian-Ze Lee**, Li-Cheng Chen, Po-Hung M. Lin, Jie-Hong R. Jiang, Alan Mishchenko, and Robert Brayton, "Efficient Computation of ECO Patch Functions," in *Proceedings of the Design Automation Conference (DAC)*, 2018.

12. Jie-Hong R. Jiang, Victor N. Kravets, and **Nian-Ze Lee**, "Engineering Change Order for Combinational and Sequential Design Rectification," in *Proceedings of the Design, Automation & Test in Europe Conference (DATE)*, 2020.

13. Shaukat Ali, Paolo Arcaini, Ichiro Hasuo, Fuyuki Ishikawa, and **Nian-Ze Lee**, "Towards a Framework for the Analysis of Multi-PLs in the Automotive Domain," in *Proceedings of the International Workshop on Variability Modelling of Software-Intensive Systems (VAMOS)*, 2019.