

# SIYUAN LIANG

SHB 905, The Chinese University of Hong Kong

(+852) 46371619 ◊ siyuan.liang@link.cuhk.edu.hk ◊ <https://syliang1999.github.io>

## EDUCATION

---

**The Chinese University of Hong Kong**

Aug 2022 - Present

Ph.D. in Computer Engineering (Expected in 2026)

GPA: 3.64/4.0

Selected Honors/Awards:

- Postgraduate Studentship   - DAC Young Fellow   - Overseas Research Attachment Programme

**Xi'an Jiaotong University**

Aug 2018 - Jul 2022

B.E. in Electrical Engineering (Elite Class)

GPA: 3.78/4.3

Selected Honors/Awards:

- Honorary Graduate   - Yuejie Academic Elite Scholarship (240,000 CNY, 2018-2022)  
- Meritorious Winner of MCM-2020 (Mathematical Contest In Modeling)

## EXPERIENCES

---

**Technical University of Munich**, Visiting Doctoral Candidate

Aug 2024 - Feb 2025

Supervisor: Prof. Dr.-Ing. Ulf Schlichtmann, Project: Design automation tools for microfluidic biochips

**Santa Clara University**, Visiting Scholar

Jun 2024 - Jul 2024

Supervisor: Prof. Ismail Emre Araci, Project: Demo fabrication of microfluidic biochips

**Xi'an Action Electronics Co., Ltd**, Assistant Software Engineer

Jul 2021 - Aug 2021

Duties: Developing power control simulation software for PV arrays

**Loten Semiconductor Co., Ltd**, Assistant Hardware Engineer

Jun 2019 - Aug 2019

Duties: Testing and calibrating samples, managing laboratory samples, arranging cargo delivery

## PUBLICATIONS

---

- [13] Multi-Layer Package Power/Ground Planes Synthesis with Balanced DC IR Drops: A Game-Theoretic Optimization Approach  
**S.Y. Liang**, Z. Zhuang, K.-Y. Chao, B. Yu, and T.-Y. Ho, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**), 2025.
- [12] AutoRE: Bayesian-Optimization-based Automatic Reliability Enhancement Tool for Flow-based Microfluidic Biochips  
**S.Y. Liang**, Y.S. Zhang, M.C. Li, T.-M. Tseng, U. Schlichtmann, T.-Y. Ho, The 62nd Design Automation Conference (**DAC**), 2025.
- [11] Deep-Reinforcement-Learning-Based Adaptive State-Feedback Control for Inter-Area Oscillation Damping with Continuous Eigenvalue Configurations  
**S.Y. Liang**, L. Huo, W.Y. Qin, X. Chen, P.Y. Sun, CSEE Journal of Power and Energy Systems (**CSEE JPES**), 2024.
- [10] Combinatorial-Coding-Based High-Performance Microfluidic Control Multiplexer: Design, Synthesis, and Adaptation  
**S.Y. Liang**, M.C. Li, T.-M. Tseng, U. Schlichtmann, T.-Y. Ho, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**), 2024.
- [9] RABER: Reliability-Aware Bayesian-Optimization-based Control Layer Escape Routing for Flow-based Microfluidics  
**S.Y. Liang**, R.L. Fu, M.C. Li, T.-M. Tseng, U. Schlichtmann, T.-Y. Ho, The 43rd ACM/IEEE International Conference on Computer-Aided Design (**ICCAD**), 2024.
- [8] Late Breaking Results: Efficient Built-in Self-Test for Microfluidic Large-Scale Integration (mLSI)  
M.C. Li, H.C. Gu, Y.S. Zhang, **S.Y. Liang**, H. Gasvoda, R. Altay, I. Araci, T.-M. Tseng, T.-Y. Ho and U. Schlichtmann, The 61st Design Automation Conference (**DAC**), 2024.

- [7] LaMUX: Optimized Logic-Gate-Enabled High-Performance Microfluidic Multiplexer Design  
**S.Y. Liang**, Y.S. Zhang, R. Altay, H. Gasvoda, M.C. Li, I.E. Araci, T.-M. Tseng, U. Schlichtmann, T.-Y. Ho, The 61st Design Automation Conference (**DAC**), 2024.
- [6] Rotor Angle Stability Prediction using Temporal and Topological Embedding Deep Neural Network Based on Grid-Informed Adjacency Matrix  
P.Y. Sun, L. Huo, X. Chen, **S.Y. Liang**, Journal of Modern Power Systems and Clean Energy (**MPCE**), 2023.
- [5] ARMM: Adaptive Reliability Quantification Model of Microfluidic Designs and Its Graph-Transformer-Based Implementation  
**S.Y. Liang**, M. Lian, M.C. Li, T.-M. Tseng, U. Schlichtmann, T.-Y. Ho, The 42nd IEEE/ACM International Conference on Computer-Aided Design (**ICCAD**), 2023.
- [4] Optimal Inter-area Oscillation Damping Control: A Transfer Deep Reinforcement Learning Approach with Switching Control Strategy  
**S.Y. Liang**, L. Huo, X. Chen, P.Y. Sun, arXiv preprint arXiv:2301.09321, 2023.
- [3] CoMUX: Combinatorial-Coding-Based High-Performance Microfluidic Control Multiplexer Design  
**S.Y. Liang**, M.C. Li, T.-M. Tseng, U. Schlichtmann, T.-Y. Ho, The 41st IEEE/ACM International Conference on Computer-Aided Design (**ICCAD**), 2022.
- [2] Fast Transient Stability Prediction Using Grid-informed Temporal and Topological Embedding Deep Neural Network  
P.Y. Sun, L. Huo, **S.Y. Liang**, X. Chen, arXiv preprint arXiv:2201.09245, 2022.
- [1] Finite Element Analysis based Optimized Vehicle Mounted Antenna Deployment  
**S.Y. Liang**, Y.S. Li, C. Gao, 2021 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting (**APS/URSI**), 2021.

## TEACHING

---

<b>TA of ENGG 2440A Discrete Mathematics</b>	Sep 2022 - Dec 2022, Sep 2023 - Dec 2023
<b>TA of ENGG 2780A Statistics for Engineers</b>	Jan 2023 - May 2023
<b>TA of ENGG 1003 Digital Literacy and Computational Thinking</b>	Jan 2024 - May 2024

## SERVICE AND LEADERSHIP

---

- Reviewer (ICCAD' 24, ISEDA' 25, IEEE TCAD, Elsevier Integration)
- More than 300 hours of social volunteer service
- CEO of Rhea Tech in technology entrepreneurship competitions during 2020-2022
- Monitor of class Electrical 81 (Elite Class) during 2018-2022