

# CURRICULUM-VITAE

Senior Researcher

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## Academic Background:

Doctor of Philosophy in School of Electronic and Electrical Engineering (Embedded Systems & Control Engineering)

College/University: Kyungpook National University, Daegu, Korea

CGPA: 4.00/4.5      Year: March 2019– February 2022

Thesis Title: A Study on Parameter Dependent Stabilization of Networked Control Systems with Variable Sampling

Supervisor: Prof. Sangmoon Lee, Professor

Master of Technology in School of Electronics Engineering (Embedded Systems & Control Engineering)

College/University: Kyungpook National University, Daegu, Korea

CGPA: 3.42/4.5      Year: August 2016–February 2019

Thesis Title: Sampled-Parameter Dependent Stabilization of Linear Parameter Varying (LPV) Systems

Supervisor: Prof. Sangmoon Lee, Professor

Bachelor of Technology in Physics

College/University: Yeungnam University, Gyeongsan, Korea

CGPA: 4.06/4.5      Year: March 2010– August 2016

Thesis Title: Research on Nano Patterning Technology using Self Assembly

Supervisor: Prof. Choi, Myoung-Seon, Professor

## Professional Experiences:

Post-Doctoral Fellow in School of Electronic and Electrical Engineering (Physical Intelligence Laboratory)

University: Kyungpook National University, Daegu, Republic of Korea

Duration: 01 Mar. 2022–01 Sep. 2022

Supervisor: Prof. Sangmoon Lee, Professor

## Researcher ID Details:

ORCID ID: <https://orcid.org/0000-0002-0906-1649>

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Github: <https://github.com/seungyong-han>

## List of Publications:

### International Journals:

1. **S.Y. Han**, S.K. Kommuri, and S.M. Lee, “Affine transformed IT2 fuzzy event-triggered control under deception attacks,” IEEE Transactions on Fuzzy Systems, vol. 29, no. 2, pp. 322-335, Feb. 2021 (**IF 12.029**).
2. **S.Y. Han** and S.M. Lee, “Sampled-parameter dependent stabilization for linear parameter varying systems with asynchronous parameter sampling,” International Journal of Robust and Nonlinear Control, 31, no. 8, pp. 3279-3309, May 2021 (**IF 4.406**).
3. S. Singh, **S.Y. Han**, and S.M. Lee, “Adaptive single input sliding mode control for hybrid-synchronization of uncertain hyperchaotic Lu systems,” Journal of the Franklin Institute, vol. 358, no. 15, pp.7468-7484, Oct. 2021 (**IF 4.504**).
4. H.I. Jung, **S.Y. Han**, S. Singh, and S.M. Lee, “Polynomially parameter dependent exponential stabilization of sampled-data LPV systems,” Applied Mathematics and Computation, vol. 411, no. 15, Dec. 2021 (**IF 4.091**).
5. S.K. Kommuri, **S.Y. Han**, and S.M. Lee, “External torque estimation using higher-order sliding mode observer for robot manipulators,” IEEE/ASME Transactions on Mechatronics, vol. 27, no. 1, Feb. 2022 (**IF 5.303**).
6. S. Singh, **S.Y. Han**, and S.M. Lee, “Transformed parameter dependent sliding mode control for discrete-time LPV systems,” IEEE Transactions on Circuits and Systems II: Express Briefs, vol. 69, no. 3, Mar. 2022 (**IF 3.292**).

7. **S.Y. Han**, S.K. Kommuri, O.M. Kwon, and S.M. Lee, "Regional sampled-data synchronization of chaotic neural networks using piecewise-continuous delay dependent Lyapunov functional," Applied Mathematics and Computation (**Accepted, IF 4.091**).
8. J.C. Park, **S.Y. Han**, and S.M. Lee, "Restored action generative adversarial imitation learning from observation for robot manipulator," ISA Transactions (**Accepted, IF 5.468**).
9. Y.S. Jin, **S.Y. Han**, and S.M. Lee, "Parameterized absolute stabilization criterion for Lur'e systems using affine matched Finsler's lemma," ISA Transactions (**Under Review, IF 5.468**).
10. **S.Y. Han** and S.M. Lee, "Sampled-data-based Iterative Cost-learning Model Predictive Control for T-S Fuzzy Systems", IEEE Transactions on Systems, Man, and Cybernetics: Systems (**Under Review, IF 11.471**).
11. **S.Y. Han**, S.K. Kommuri, and Y.S. Jin, "New Results on Sampled-data Synchronization of GRUs using Mismatched Parameters," IEEE Transactions on Neural Networks and Learning Systems (**Submission, IF 14.255**).

#### **International Conferences:**

1. Y.S. Jin, **S.Y. Han**, J.C. Park, and S.M. Lee, "Sampled-data synchronization of recurrent neural networks with multi-GPUs," 2019 IEEE Symposium Series on Computational Intelligence (SSCI), pp. 2172-2177, 2019 (**China, poster presentation**).
2. **S.Y. Han**, H.Y. Jung, J.H. Park, and S.M. Lee, "Constrained  $H_\infty$  control for active suspension systems with aperiodic sampling: a looped functional approach, 2019 6th International Conference on Control, Decision and Information Technologies (CoDIT), pp. 796-800, 2019 (**France, oral presentation**).
3. **S.Y. Han**, Y.S. Jin, E.C. Lee, and S.M. Lee, "Sampled-parameter dependent Lyapunov function approach for LPV sampled-data," 2019 International Nonlinear Dynamics Conference (NODYCON), 2019 (**Italy, poster presentation**).
4. Y.S. Jin, **S.Y. Han**, E.C. Lee, C. Shin, J.P. Yun, and S.M. Lee, "Development of autonomous driving systems using state estimator with multi-rate sampled-data," 2019 IEEE International Conference on Consumer Electronics (ICCE), 2019 (**USA, oral presentation**).
5. **S.Y. Han**, Ju H. Park, and S.M. Lee, "Event-Triggered Controller for Synchronization of Chaotic Neural Networks using Clock-Dependent Lyapunov Functionals," 2022 3th Asian Control Conference (ASCC), 2022 (**Republic of Korea, oral presentation**).

#### **Domestic Journals:**

1. **S.Y. Han** and S.M. Lee, "Sampled-data MPC for leader-following of multi-mobile robot system," The Transactions of the Korean Institute of Electrical Engineers, vol. 67, no. 2, pp.308-313, Feb. 2018.
2. J.C. Park, **S.Y. Han**, Y.S. Jin, and S.M. Lee, "Variable impedance control for industrial manipulators based on sensorless external force estimator for CPPS," IEMEJ Journal of Embedded Systems and Applications, vol. 14 no. 5, pp. 259-267, Oct. 2019.
3. H.I. Jung, **S.Y. Han**, and S.M. Lee, "Event-triggered  $H_2$  attitude controller design for 3 DOF Hover systems," IEMEJ Journal of Embedded Systems and Applications, vol. 15, no. 3, pp.139-148, Jun. 2020.
4. D.H. Yue, **S.Y. Han**, and S.M. Lee, "Leader-following sampled-data control of wheeled mobile robots using clock dependent Lyapunov function," IEMEJ Journal of Embedded Systems and Applications, vol. 16, no. 4, pp.119-127, Aug. 2021.

#### **Research Interests:**

- Sampled-Data Control
- Model Predictive Control
- Networked Control Systems
- Reinforcement Learning
- Physics Informed Machine Learning

#### **Computer Skills:**

- MATLAB
- Python
- Latex

### **Reviewer Experience:**

- Nonlinear Dynamics
- Applied Mathematics and Computation
- International Journal of Control, Automation and Systems

### **Academic Achievements and Activities:**

- Awarded 2019 Kyungpook National University Information & Communications Technology Research Congress, Republic of Korea.
- Awarded 2022 BK-21, Phase-IV (Brain Korean) Performance Forum in Education Research Team of Kyungpook National University, Republic of Korea.
- Session Chair of Recent Advances on Complex Networks and Neural Networks II, Asian Control Conference 2022 held in Jeju Island, Republic of Korea.

### **Research Collaborators/Co-authors:**

- Prof. Sangmoon Lee, Professor, Kyungpook National University, Daegu, Republic of Korea
- Prof. Ju H. Park, Professor, Yeungnam University, Kyongsan, Republic of Korea
- Prof. Suneel Kumar Kommuri, Assistant Professor, Xi'an Jiaotong-Liverpool University, Suzhou , China
- Prof. Oh-Min Kwon, Professor, Chungbuk National University, Cheongju, Republic of Korea
- Dr. Satnesh Singh, Research Scholar, Kyungpook National University, Daegu, Republic of Korea
- Dr. Yongsik Jin, Research Scholar, Electronics and Telecommunications Research Institute, Daegu, Republic of Korea

### **Personal Profile:**

- Date of Birth : 15 January 1992
- Sex : Male
- Marital Status : Single
- Nationality : Korean

### **Declaration:**

I hereby declare that the information given above is true to the best of my knowledge and belief.

Seungyong Han

