

# Masaaki Nagahara

## Full Professor

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## Summary

Dr. Masaaki Nagahara received the bachelor's degree in engineering from Kobe University in 1998, and the master's degree and the Doctoral degree in informatics from Kyoto University in 2000 and 2003, respectively. He is currently a Full Professor with the Institute of Environmental Science and Technology, The University of Kitakyushu. He has been also a Visiting Professor with IIT Bombay since 2017.

Dr. Nagahara received two remarkable international awards: George S. Axelby Outstanding Paper Award in 2018 and Transition to Practice Award in 2012 from the IEEE Control Systems Society. He is a senior member of the IEEE. Also, he received many awards from Japanese research societies such as Young Authors Award in 1999, Best Paper Award in 2012, and the Best Book Authors Award in 2016 from SICE, the Best Tutorial Paper Award from the IEICE Communications Society in 2014,

Masaaki Nagahara's research interests include automatic control, signal processing, and machine learning. He is author or co-author of many publications in top journals (e.g. IEEE Transactions on Automatic Control, IEEE Transactions on Signal Processing, Automatica, etc), and top conferences (e.g. IEEE CDC, IEEE ICASSP, etc).

## *Acronyms used in this document*

**IEEE** (The Institute of Electrical and Electronics Engineers), **SIAM** (Society for Industrial and Applied Mathematics), **IFAC** (International Federation of Automatic Control), **SICE** (The Society of Instrument and Control Engineers, Japan), **ISCIE** (The Institute of Systems, Control and Information Engineers, Japan), **IEICE** (The Institute of Electronics, Information and Communication Engineers, Japan), **MEXT** (Ministry of Education, Culture, Sports, Science and Technology, Japan), **JSPS** (Japan Society for Promotion of Science, Japan), **ERA**(The Excellence in Research for Australia).

## Education and Qualifications

March 2003: **PhD**, *Informatics, Kyoto University, Japan*

Thesis Title: Multirate digital signal processing via sampled-data  $H^\infty$  optimization,  
Advisor: Prof. Yutaka Yamamoto

March 2000: **Master Degree**, *Informatics, Kyoto University, Japan*

Thesis Title: Multirate digital signal processing based on sampled-data  $H^\infty$  control theory, Advisor: Prof. Yutaka Yamamoto

March 1998: **Bachelor Degree**, *Engineering, Kobe University, Japan*

Thesis Title: On the computation of value sets, Advisor: Prof. Yuzo Ohta

## Positions held

Since April 2016: **Full Professor**

Institute of Environmental Science and Technology, The University of Kitakyushu,  
Japan

Since October 2016: **Visiting Professor**

Systems & Control Engineering (SysCon), Indian Institute of Technology (IIT) Bom-  
bay, India

October 2012–March 2016: **Senior Lecturer**

Graduate School of Informatics, Kyoto University, Japan

April 2007–October 2012: **Assistant Professor**

Graduate School of Informatics, Kyoto University, Japan

April 2005–August 2012: **Part-time Instructor**

School of Engineering Science, Osaka University, Japan

April 2003–March 2007: **Associate Researcher**

Graduate School of Informatics, Kyoto University, Japan

## Short-term Positions

As a visiting researcher, I have visited the following universities: **Indian Institute of Technology Bombay** (India), **Indian Institute of Technology Hyderabad** (India), **Paderborn University** (Germany), **University of Newcastle** (Australia), **Aalborg University** (Denmark), and **Texas Tech University** (USA),

## Selected Honors and Awards

**George S. Axelby Outstanding Paper Award** in 2018 from the IEEE Control Systems Society for the following published paper:

M. Nagahara, D. E. Quevedo, and D. Nesic, Maximum Hands-off Control: A Paradigm of Control Effort Minimization, *IEEE Transactions on Automatic Control*, Vol. 61, No. 3, pp. 735-747, 2016.

**Transition to Practice Award** in 2012 from the IEEE Control Systems Society for the introduction and development of the sound-processing technology incorporated in a large number of LSI chips by SANYO Semiconductor. This is an international award, which is annually presented to a distinguished contributor to the transition of control and systems theory to practical, industrial, or commercial systems.

**Best Tutorial Paper Award** in 2014 from the IEICE Communications Society for the quality of a tutorial paper, "A User's Guide to Compressed Sensing for Communications Systems," published in *IEICE Transactions on Communications*. This award is annually presented to the best-quality tutorial paper published in the journal.

**Best Paper Award** in 2012 from the SICE for the quality of a research paper, " $H^\infty$  design of periodically nonuniform interpolation and decimation for non-band-limited signals," published in *SICE Journal of Control, Measurement, and System Integration*. This award is annually presented to high-quality papers published in the journal.

**Senior member of IEEE** in 2014 presented by the IEEE. Senior member is the highest grade for which IEEE members can apply.

## Professional Activities

- Associate Editor of *SICE Journal of Control, Measurement, and System Integration* (JCMSI)
- Associate Editor for Conference Editorial Board, IEEE Control Systems Society, IEEE
- Member of
  - IEEE Control Systems Society Technical Committees on Networks and Communications

- IFAC Technical Committee 2.1 Control Design
- IEEE Signal Processing Society, Signal Processing Theory and Methods (SPTM) Technical Committee (Affiliate Member)

## Collaborators from Outside Japan

**Australia:** Prof. Dragan Nešić (The University of Melbourne), Prof. Brian D. O. Anderson (Australian National University)

**India:** Prof. Dabasish Chatterjee (Indian Institute of Technology Bombay), Prof. D. Manjunath (Indian Institute of Technology Bombay)

**United States:** Prof. Pramod P. Khargonekar (University of Florida), Prof. Clyde F. Martin (Texas Tech University), Prof. Mathukumalli Vidyasagar (Texas University at Dallas, IIT Hyderabad)

**Europe:** Prof. Daniel E. Quevedo (University of Paderborn, Germany), Prof. Jan Østergaard (Aalborg University, Denmark)

## Five Selected Publications over the last 5 Years

1. **M. Nagahara** and Y. Yamamoto, Digital repetitive controller design via sampled-data delayed signal reconstruction, *Automatica*, (**A\* using the ERA 2010 ranking**), Vol. 65, pp. 203–209, 2016.
2. **M. Nagahara**, D. E. Quevedo, and D. Nesic, Maximum hands-off control: a paradigm of control effort minimization, *IEEE Transactions on Automatic Control* (**A\* using the ERA 2010 ranking**), Vol. 61, No. 3, pp. 735–747, 2016.
3. **M. Nagahara**, D. E. Quevedo, and J. Østergaard, Sparse Packetized Predictive Control for Networked Control over Erasure Channels, *IEEE Transactions on Automatic Control* (**A\* using the ERA 2010 ranking**), Vol. 59, No. 7, pp. 1899–1905, July 2014.
4. **M. Nagahara** and Y. Yamamoto,  $H^\infty$ -optimal fractional delay filters, *IEEE Transactions on Signal Processing* (**A\* using the ERA 2010 ranking**), Vol. 61, No. 18, pp. 4473–4480, 2013.
5. **M. Nagahara** and Y. Yamamoto, Frequency domain min-max optimization of noise-shaping delta-sigma modulators, *IEEE Transactions on Signal Processing* (**A\* using the ERA 2010 ranking**), Vol. 60, No. 6, pp. 2828–2839, 2012.

## Languages

Japanese: **Native**    English: **Fluent**

## Citizenship

Japanese

Last updated: January 29, 2019  
<https://nagahara-masaaki.github.io/>