

Researcher Portfolio:

Salutation: Dr

First Name: Jihoon

Last Name: Hong

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Photo:



Designation: Team Lead, Scientist II

Research Groups: Manufacturing Execution and Control

Introduction:

Dr. Hong Jihoon is a Scientist and Team Lead of Shop-floor Health Management (SHM) at Singapore Institute of Manufacturing Technology (SIMTech), A*STAR. He received the B.Sc. degree in Computer Software from Sangmyung University, South Korea, in 2006 and the M.Sc. and Ph.D. degrees in engineering from Keio University, Japan, in 2011 and 2014, respectively. In 2014, he was a Special Researcher of Fellowships of the Japan Society for the Promotion of Science (JSPS) for Young Scientists. From 2014 to 2016, he was a Postdoctoral Fellow of JSPS and a Visiting Researcher in Science and Technology at Keio University, Japan.

Research Interest:

Machine learning, signal processing, condition monitoring, predictive maintenance, fault detection, diagnostics and prognostics, localization and activity recognition.

Bio Notes:

Ph.D. in Engineering, Keio University, Japan, 2014

M. Sc. in Engineering, Keio University, Japan, 2011

B. Sc. in Computer Software, Sangmyung University, Korea, 2006

Awards:

Awarded Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellow (PD), Oct. 2014 – Mar. 2016.

Awarded Japan Society for the Promotion of Science (JSPS) Doctoral Course Students (DC2), Apr. 2014 – Sept. 2014.

Publications:

Journal Paper

- [1] P. N. Varela, J. Hong, T. Ohtsuki, and X. Qin, "IGMM-based co-localization of mobile users with ambient radio signals," *IEEE Internet of Things Journal*, vol. 4, no. 2, Apr. 2017. (Impact Factor: 7.596)
- [2] J. Hong and T. Ohtsuki, "Signal eigenvector-based device-free passive localization using array sensor," *IEEE Transactions on Vehicular Technology*, vol. 64, no. 4, pp. 1354–1363, Apr. 2015. (Impact Factor: 4.066)
- [3] Y. Inatomi, J. Hong, and T. Ohtsuki, "Hidden Markov model based localization using array antenna," *International Journal of Wireless Information Networks*, vol. 20, no. 4, pp. 246–255, Dec. 2013.
- [4] J. Hong and T. Ohtsuki, "State classification with array sensor using support vector machine for wireless monitoring systems," *IEICE Transactions on Communications*, vol. E95-B, no. 10, pp. 3088–3095, Oct. 2012.
- [5] J. Hong, S. Kawakami, C. N. Nyirenda, and T. Ohtsuki, "Array antenna based localization using spatial smoothing processing," *Journal of Communications*, vol. 7, no. 6, pp. 427–435, June 2012.

Conference Paper

- [1] J. Hong, Q. Wang, X. Qiu, and H. L. Chan, "Remaining useful life prediction using time-frequency feature and multiple recurrent neural networks," *International Conference on Emerging Technologies and Factory Automation, (ETFA), Zaragoza, Spain, 10-13 Sep. 2019.*
- [2] F. Liu, K. J. Lee, and J. Hong, "A feature-aware online learning approach for support vector machine classification," in *Proc. International Conference on Control, Automation, Robotics, and Vision (ICARCV), Singapore, 18-21 Nov. 2018.*
- [3] M. S. Nguyen, K. J. Lee, and J. Hong, "Dispatching of multiple autonomous intelligent vehicles considering the stochastic traveling time by genetic algorithm," in *Proc. International Conference on Control, Automation, Robotics, and Vision (ICARCV), Singapore, 18-21 Nov. 2018.*
- [4] Q. Wang, K. J. Lee, and J. Hong, "DOSS: Dual over sampling strategy for imbalanced data classification," in *Proc. Annual Conference of the IEEE Industrial Electronics Society (IECON), Washington D.C., U.S.A., 21-23 Oct. 2018.*
- [5] H. Xu, C. Zhang, G. S. Hong, J. H. Zhou, J. Hong, and K. S. Woon, "Gated recurrent units based neural network for tool condition monitoring," in *Proc. International Joint Conference on Neural Networks (IJCNN), Rio, Brazil, 8-13 July 2018.*
- [6] D. Yang and J. Hong, "Performing literature review using text mining, Part II: Expanding domain knowledge with abbreviation identification," in *Proc. IEEE International Conference on Big Data (Big Data), Boston, MA, U.S.A., 11-14 Dec. 2017.*
- [7] J. Hong, J. H. Zhou, H. L. Chan, C. Zhang, H. Xu, and G. S. Hong, "Tool condition monitoring in deep hole gun drilling: a data-driven approach," *IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), 10-13 Dec. 2017.*
- [8] J. Hong, M. Park, and N. Okazaki, "SGM: A subgroup management scheme using k-means clustering in M2M systems," *International Conference on Network-Based Information Systems (NBIS), 7-9 Sept. 2016.*
- [9] P. N. Varela, J. Hong, and T. Ohtsuki, "IGMM-based approach for discovering co-located mobile users," *IEEE Global Communications Conference (GLOBECOM), Washington D.C., U.S.A, 4-8 Dec. 2016.*
- [10] Y. Agata, T. Ohtsuki, and J. Hong, "HMM-based activity recognition using array antenna," *IEEE Global Communications Conference (GLOBECOM), Washington D.C., U.S.A, 4-8 Dec. 2016.*
- [11] Y. Agata, J. Hong, and T. Ohtsuki, "Room-level proximity detection based on RSS of dual-band Wi-Fi signals," *IEEE International Conference on Communications (ICC), Kuala Lumpur, Malaysia, 23-27 June 2016.*

- [12] Y. Agata, J. Hong, and T. Ohtsuki, "Room-level proximity detection using beacon frame from multiple access points," in Proc. Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC 2015), Hong Kong, China, 16–19 Dec. 2015.
- [13] Y. Hino, J. Hong, and T. Ohtsuki, "Activity recognition using array antenna," in Proc. IEEE International Conference on Communications (ICC), London, UK, 8–12 June 2015.
- [14] S. Mashiyama, J. Hong, and T. Ohtsuki, "Activity recognition using low resolution infrared array sensor," in Proc. IEEE International Conference on Communications (ICC), London, UK, 8–12 June 2015.
- [15] J. Hong and T. Ohtsuki, "Device-free passive localization from signal subspace eigenvectors," in Proc. IEEE Global Communications Conference (GLOBECOM), Austin, TX, 8–12 Dec. 2014.
- [16] S. Mashiyama, J. Hong, and T. Ohtsuki, "A fall detection system using low resolution infrared array sensor," in Proc. IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC), Washington D.C., U.S.A., 2–5 Sept. 2014.
- [17] Y. Hino, J. Hong, and T. Ohtsuki, "Detecting unexpected fall using array antenna," in Proc. IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC), Washington D.C., U.S.A., 2–5 Sept. 2014.
- [18] J. Hong and T. Ohtsuki, "Array sensor: Monitoring using wireless signals," in Proc. The International Conference on Information and Communication Technology Convergence (ICTC), 2013 KICS International Conference on, Jeju Island, Korea, 14–16 Oct. 2013.
- [19] J. Hong and T. Ohtsuki, "Ambient intelligence sensing using array sensor: Device-free radio based approach," in Proc. The 4th Workshop on Context-Systems Design, Evaluation and Optimisation (CoSDEO2013) in conjunction with the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2013), Zurich, Switzerland, 9 Sept. 2013.
- [20] J. Hong, S. Tomii, and T. Ohtsuki, "Cooperative fall detection using Doppler radar and array sensor," in Proc. IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC), London, UK, 8–11 Sept. 2013.
- [21] Y. Inatomi, J. Hong, and T. Ohtsuki, "Hidden Markov model based localization using array antenna," in Proc. IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC), Sydney, Australia, 9–12 Sept. 2012.
- [22] J. Hong and T. Ohtsuki, "Passive localization using array sensor with support vector machine," in Proc. Positioning, Navigation and Communication, IEEE WPNC 2012. 9th Workshop on, Dresden, Germany, 15–16 Mar. 2012.
- [23] T. Ohtsuki and J. Hong, "[Invited Paper] Activity recognition based on array sensor," in Proc. Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC 2011), Xi'an, China, 18–21 Oct. 2011.
- [24] J. Hong and T. Ohtsuki, "A state classification method based on space-time signal processing using SVM for wireless monitoring systems," in Proc. IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC), Toronto, Canada, 11–14 Sept. 2011.

Patents

- [1] T. Ohtsuki and J. Hong, "Event Detecting Apparatus," Japan Patent 5643554, Nov. 2014.
- [2] T. Ohtsuki, J. Hong, and S. Kawakami, "Event Detecting Apparatus," Japan Patent 5567974, June 2014.