

MINSEOK SONG

Curriculum Vitae

Department of Industrial & Management Engineering
POSTECH (Pohang University of Science and Technology)

+82 54 279 2376

mssong@postech.ac.kr

My Webpage

Education

- 2001–2005 **PhD, Industrial & Management Engineering, POSTECH (Pohang University of Science and Technology), South Korea.**
Dissertation: Business Process Mining: deriving process knowledge from business process data
Advisor: Injun Choi, Ph.D
- 1999–2001 **M.S., Industrial & Management Engineering, POSTECH, South Korea.**
Thesis: XML-based Process Definition Language for Process Engineering
Advisor: Injun Choi, Ph.D
- 1995–1999 **B.S., Industrial & Management Engineering (Minor in Computer Science), POSTECH, South Korea.**
Cum Laude

Professional Track Record

POSTECH, South Korea

- Mar. 2022 – **Professor**, Department of Industrial & Management Engineering.
present
- Feb. 2016 – **Associate Professor**, Department of Industrial & Management Engineering.
Feb. 2022
- Jan. 2018 – **Head**, Open Innovation Bigdata Research Center.
Jan. 2024

UNIST (Ulsan National Institute of Science & Technology), South Korea

- Mar. 2014 – **Dean**, Academic Information Affairs.
Jan. 2016
- Mar. 2014 – **Associate Professor**, School of Business Administration.
Jan. 2016
- Jan. 2012 – **Dean (interim)**, School of Business Administration.
Jul. 2013
- Jan. 2010 – **Assistant Professor**, School of Business Administration.
Feb. 2014

Seoul University of Technology, South Korea

- Sep. 2009 – **Research Professor**, Department of Industrial & System Engineering.
Dec. 2009

TU/e (Eindhoven University of Technology), the Netherlands

- Feb. 2006 – **Postdoctoral Researcher**, Information Systems group, Department of Technology Management.
Aug. 2009 Supervisor: Prof.dr.ir. Wil M.P. van der Aalst
- Jun. 2007 – **Scientific Staff**, The research institute BETA.
Aug. 2009

Honors & Awards

- 2021 **Proud Postechian Award (Education)**, POSTECH, 2021.
- 2021 – 2022 **Moo-Eun-Jae Chair Professor**, POSTECH, 2021 - 2022.
- 2020 **Best Paper Award**, International Workshop on Process-Oriented Data Science for Healthcare (PODS4H).
- 2020 **Best Teacher Award**, Department of Industrial & Management Engineering, POSTECH.
- 2020 **Best Paper Award**, The Korean Society for Quality in Health Care.
- 2020 **Best Paper Award**, The Society for Computational Design and Engineering.
- 2013, 2019 **Best Paper Award**, The Korean Society of Medical Informatics.
- 2004 **BK21 Scholarship for Exchange Program** in Eindhoven University of Technology, the Netherlands.
- 1999 **Graduated Cum Laude**, Department of Industrial & Management Engineering, POSTECH.
as a supervisor
- 2021 Ducksang Lee, **NHN Award (3rd Prize)**, Korea ICT Challenge.
- 2021 Minchul Jung, **Young Investigator Award**, The Korea Society of Science & Football.
- 2020 Ducksang Lee, **IITP President Award (2nd prize)**, Korea ICT Colloquium.
- 2020 Minchul Jung, Youngsuk Chang, & Jaemin Shin, **SK Telecom CEO Award (3rd prize)**, TKorea ICT Colloquium.
- 2020 Shinyum Park, **Minister of MTIE (Ministry of Trade, Industry and Energy) Award (the 1st prize)**, Korea Industrial Research Project Challenge, 2020.
- 2015 Minsu Cho, **Bronze Prize**, Process Mining Case Competition, Asia-Pacific Conference on Business Process Management.
- 2014 Sookyong Son, **Bronze Prize**, the Samsung Electro-Mechanics Paper Competition.

Publications

Publication and citation summary

54 peer-reviewed papers (42 international, 12 domestic) published.

83 conference/workshop papers (35 international, 48 domestic) published

>8017 total citations; h-index of 34 (by Google).

Refereed International Journal Publications

- 2022 Kangah Park, Jungeun Lim, Woohyun Hwang, Junhyun Park, **Minseok Song***, Byung-In Kim, Jung Goo Park, and Doo Jin Choi, Ridesourcing in manufacturing sites: A framework and case study. *International Journal of Industrial Engineering: Theory, Applications and Practice*, 29(5), 2022. **(SCIE, IF=0.633)**.
- 2022 Jungeun Lim, Kidong Kim, **Minseok Song***, Sooyoung Yoo*, Hyunyoung Baek, Seok Kim, Somin Park, and Woo-Jin Jeong, Assessment of the feasibility of developing a clinical pathway using a clinical order log. *Journal of Biomedical Informatics*, 128:104038, 2022. **(SCIE, IF=6.317)**.
- 2022 Hyeonah Cho, Hyunyoung Ryu, and **Minseok Song***, Pass2vec: Analyzing soccer players' passing style using deep learning. *International Journal of Sports Science & Coaching*, 17(2):355–365, 2022. **(SSCI, IF=2.051)**.

- 2022 Jorge Munoz-Gama*, Niels Martin, Carlos Fernandez-Llatas, Owen A. Johnson, Marcos Sepúlveda, Emmanuel Helm, Victor Galvez-Yanjari, Eric Rojas, Antonio Martinez-Millana, Davide Aloini, Ilaria Angela Amantea, Robert Andrews, Michael Arias, Iris Beerepoot, Elisabetta Benevento, Andrea Burattin, Daniel Capurro, Josep Carmona, Marco Comuzzi, Benjamin Dalmas, Rene de la Fuente, Chiara Di Francescomarino, Claudio Di Ciccio, Roberto Gatta, Chiara Ghidini, Fernanda Gonzalez-Lopez, Gema Ibanez-Sanchez, Hilda B. Klasky, Angelina Prima Kurniati, Xixi Lu, Felix Mannhardt, Ronny Mans, Mar Marcos, Renata Medeiros de Carvalho, Marco Pegoraro, Simon K. Poon, Luise Pufahl, Hajo A. Reijers, Simon Remy, Stefanie Rinderle-Ma, Lucia Sacchi, Fernando Seoane, **Minseok Song**, Alessandro Stefanini, Emilio Sulis, Arthur H.M. ter Hofstede, Pieter J. Toussaint, Vicente Traver, Zoe Valero-Ramon, Inge van de Weerd, Wil M.P. van der Aalst, Rob Vanwersch, Mathias Weske, Moe Thandar Wynn, and Francesca Zerbato, Process mining for healthcare: Characteristics and challenges. *Journal of Biomedical Informatics*, 127:103994, 2022. **(SCIE, IF=6.317)**.
- 2021 Minsu Cho, Gyunam Park, **Minseok Song***, Jinyoun Lee, Byeongeon Lee, and Euseok Kum, Discovery of resource-oriented transition systems for yield enhancement in semiconductor manufacturing. *IEEE Transactions on Semiconductor Manufacturing*, 34(1):17–24, 2021. **(SCIE, IF=1.977)**.
- 2021 Minsu Cho, Gyunam Park, **Minseok Song***, Jinyoun Lee, and Euseok Kum, Quality-aware resource model discovery. *Applied Sciences*, 11(12):5730, 2021. **(SCIE, IF=2.679)**.
- 2021 Deoksang Lee and **Minseok Song***, Mexchange: A privacy-preserving blockchain-based framework for health information exchange using ring signature and stealth address. *IEEE Access*, 9:158122–158139, 2021. **(SCIE, IF=3.367)**.
- 2021 Daniel Beverungen*, Joos C. A. M. Buijs, Jörg Becker, Claudio Di Ciccio, Wil M.P. van der Aalst, Christian Bartelheimer, Jan vom Brocke, Marco Comuzzi, Karsten Kraume, Henrik Leopold, Martin Matzner, Jan Mendling, Nadine Ogonek, Till Post, Manuel Resinas, Kate Revoredo, Adela del Río-Ortega, Marcello La Rosa, Flávia Maria Santoro, Andreas Solti, **Minseok Song**, Armin Stein, Matthias Stierle, and Verena Wolf, Seven paradoxes of business process management in a hyper-connected world. *Business & Information Systems Engineering*, 63:145–156, 2021. **(SCIE, IF=5.837)**.
- 2020 Minsu Cho, **Minseok Song***, Junhyun Park, Seok-Ran Yeom, Il-Jae Wang, and Byung-Kwan Choi, Process mining-supported emergency room process performance indicators. *International Journal of Environmental Research and Public Health*, 17(17):6290, 2020. **(SCIE/SSCI, IF=2.849)**.
- 2020 Minsu Cho, Kidong Kim, Jungeun Lim, Hyunyoung Baek, Seok Kim, Hee Hwang, **Minseok Song***, and Sooyoung Yoo, Developing data-driven clinical pathways using electronic health records: The cases of total laparoscopic hysterectomy and rotator cuff tears. *International Journal of Medical Informatics*, 133:104015, 2020. **(SCIE, IF=3.025)**.
- 2020 Gyunam Park and **Minseok Song***, Predicting performances in business processes using deep neural networks. *Decision Support Systems*, 129:113191, 2020. **(SCIE, IF=4.721)**.
- 2020 Do-Hyeon Ryu, Ryu-Hee Kim, Seung-Hyun Choi, Kwang-Jae Kim, Young Myoung Ko, Young-Jin Kim, **Minseok Song**, and Dong Gu Choi, Utilizing electricity consumption data to assess the noise discomfort caused by electrical appliances between neighbors: A case study of a campus apartment building. *Sustainability*, 12(20):8704, 2020. **(SCIE/SSCI, IF=2.576)**.
- 2019 Minsu Cho, **Minseok Song***, Sooyoung Yoo, and Hajo A. Reijers, An evidence-based decision support framework for clinician medical scheduling. *IEEE Access*, 7:15239–15249, 2019. **(SCIE, IF=3.367)**.

- 2019 Kyudong Park, Jiyoung Kwahk, Sung Ho Han, **Minseok Song**, Dong Gu Choi, Hyeji Jang, Dohyeon Kim, Young Deok Won, and Insub Jeong, Modelling the intrusive feelings of advanced driver assistance systems based on vehicle activity log data: Case study for the lane keeping assistance system. *International Journal of Automotive Technology*, 20:455–463, 2019. **(SCIE, IF=1.245)**.
- 2019 Josue Obregon, **Minseok Song**, and Jae-Yoon Jung, Infocflow: Mining information flow based on user community in social networking services. *IEEE Access*, 7:48024–48036, 2019. **(SCIE, IF=3.367)**.
- 2018 Hyunyoung Baek, Minsu Cho, Seok Kim, Hee Hwang, **Minseok Song***, and Sooyoung Yoo, Analysis of length of hospital stay using electronic health records: A statistical and data mining approach. *PLOS ONE*, 13(4):1–16, 2018. **(SCIE, IF=2.776)**.
- 2017 Minsu Cho, **Minseok Song***, Marco Comuzzi, and Sooyoung Yoo, Evaluating the effect of best practices for business process redesign: An evidence-based approach based on process mining techniques. *Decision Support Systems*, 104:92–103, 2017. **(SCIE, IF=4.721)**.
- 2016 Sooyoung Yoo, Minsu Cho, Eunhye Kim, Seok Kim, Yerim Sim, Donghyun Yoo, Hee Hwang, and **Minseok Song***, Assessment of hospital processes using a process mining technique: Outpatient process analysis at a tertiary hospital. *International Journal of Medical Informatics*, 88:34–43, 2016. **(SCIE, IF=3.745)**.
- 2016 Bernardo Nugroho Yahya, **Minseok Song***, Hyerim Bae, Sung ook Sul, and Jei-Zheng Wu, Domain-driven actionable process model discovery. *Computers & Industrial Engineering*, 99:382–400, 2016. **(SCIE, IF=2.623)**.
- 2015 Sooyoung Yoo*, Minsu Cho, Seok Kim, Eunhye Kim, So Min Park, Kidong Kim, Hee Hwang, and **Minseok Song**, Conformance analysis of clinical pathway using electronic health record data. *Health Informatics Research*, 21(3):161–166, 2015. **(ESCI, IF=0.56)**.
- 2015 Minsu Cho, **Minseok Song***, and Sooyoung Yoo, A systematic methodology for outpatient process analysis based on process mining. *International Journal of Industrial Engineering*, 22(4):480–493, 2015. **(SCIE, IF=0.537)**.
- 2015 Riska Asriana Sutrisnowati, Hyerim Bae*, and **Minseok Song**, Bayesian network construction from event log for lateness analysis in port logistics. *Computers & Industrial Engineering*, 89:53–66, 2015. **(SCIE, IF=2.623)**.
- 2015 Jinyoun Lee, Sanghyun Sung, **Minseok Song**, and Injun Choi*, A business process simulation framework incorporating the effects of organizational structure. *International Journal of Industrial Engineering*, 22(4):454–466, 2015. **(SCIE, IF=0.537)**.
- 2013 **Minseok Song***, Hanna Yang, Seyed Hossein Siadat, and Mykola Pechenizkiy, A comparative study of dimensionality reduction techniques to enhance trace clustering performances. *Expert Systems with Applications*, 40(9):3722–3737, 2013. **(SCIE, IF=5.452)**.
- 2013 Eunhye Kim, Seok Kim, **Minseok Song**, Seongjoo Kim, Donghyun Yoo, Hee Hwang, and Sooyoung Yoo*, Discovery of out-patient care process of a tertiary university hospital using process mining. *Health Informatics Research*, 19(1):42–49, 2013. **(ESCI, IF=0.56)**.
- 2013 Daeuk Jeon, Bernardo Nugroho Yahya, Hyerim Bae*, **Minseok Song**, Sung ook Sul, and Riska Asriana Sutrisnowati, Conceptual framework for container-handling process analytics. *ICIC Express Letters*, 7(6):1919–1924, 2013.
- 2012 Seyed Hossein Siadat and **Minseok Song***, Understanding requirement engineering for context-aware system-based applications. *Journal of Software Engineering and Applications*, 5(8):536–544, 2012.
- 2011 Wil M.P. van der Aalst*, M. Helen Schonenberg, and **Minseok Song**, Time prediction based on process mining. *Information Systems*, 36(2):450–475, 2011. **(SCI, IF=2.466)**.
- 2010 Agnes Koschmider*, **Minseok Song**, and Hajo A Reijers, Social software for business process modeling. *Journal of Information Technology*, 25(3):308–322, 2010. **(SSCI, IF=3.625)**.

- 2009 Anne Rozinat*, Ronny S. Mans, **Minseok Song**, and Wil M.P. van der Aalst, Discovering Simulation Models. *Information Systems*, 34(3):305–327, 2009. (SCIE, IF=2.446).
- 2009 Hajo A. Reijers*, **Minseok Song**, and Byungduk Jung, Analysis of a collaborative workflow process with distributed actors. *Information Systems Frontiers*, 11:307–322, 2009. (SCIE, IF=3.63).
- 2009 Kwan Hee Han*, Jin Gu Kang, and **Minseok Song**, Two-stage process analysis using the process-based performance measurement framework and business process simulation. *Expert Systems with Applications*, 36(3, Part 2):7080–7086, 2009. (SCIE, IF=5.452).
- 2008 **Minseok Song*** and Wil M.P. van der Aalst, Towards Comprehensive Support for Organizational Mining. *Decision Support Systems*, 46(1):300–317, 2008. (SCIE, IF=4.721).
- 2008 Anne Rozinat*, Ronny S. Mans, **Minseok Song**, and Wil M.P. van der Aalst, Discovering colored Petri nets from event logs. *International Journal on Software Tools for Technology Transfer volume*, 10(1):57–74, 2008. (SCIE, IF=0.945).
- 2008 Namchul Do, Injun Choi*, and **Minseok Song**, Propagation of engineering changes to multiple product data views using history of product structure changes. *International Journal of Computer Integrated Manufacturing*, 21(1):19–32, 2008. (SCIE, IF=2.861).
- 2007 Jisoo Jung, Injun Choi*, and **Minseok Song**, An integration architecture for knowledge management systems and business process management systems. *Computers in Industry*, 58(1):21–34, 2007. (SCIE, IF=3.945).
- 2007 Wil M.P. van der Aalst*, Hajo A. Reijers, A.J.M.M. Weijters, B.F. van Dongen, A.K. Alves de Medeiros, **Minseok Song**, and H.M.W. Verbeek, Business Process Mining: An Industrial Application. *Information Systems*, 32(5):713–732, 2007. (SCIE, IF=2.446).
- 2006 Injun Choi*, S. H. Suh, K. Kim, **Minseok Song**, M. Jang, and B. E. Lee, Development process and data management of turnstep: a step-compliant cnc system for turning. *International Journal of Computer Integrated Manufacturing*, 19(6):546–558, 2006. (SCIE, IF=2.861).
- 2005 Injun Choi*, Hyunbae Jeong, **Minseok Song**, and Young U. Ryu, Ipm-epdl: an xml-based executable process definition language. *Computers in Industry*, 56(1):85–104, 2005. (SCIE, IF=3.945).
- 2005 Wil M.P. van der Aalst*, Hajo A. Reijers, and **Minseok Song**, Discovering Social Networks from Event Logs. *Computer Supported Cooperative work*, 14(6):549–593, 2005. (SCIE, IF=1.825).
- 2004 Injun Choi*, Jisoo Jung, and **Minseok Song**, An integrated framework for process knowledge management. *International Journal of Innovation and Learning*, 1(4):399–408, 2004. (ESCI, IF=1.00).
- 2003 Injun Choi*, **Minseok Song**, Chulsoon Park, and Namkyu Park, An xml-based process definition language for integrated process management. *Computers in Industry*, 50(1):85–102, 2003. (SCIE, IF=3.945).

Refereed Domestic Journal Publications

- 2020 Shin-Nyum Park and **Minseok Song***, A process perspective event-log analysis method for airport bhs (baggage handling system). *The Korean Journal of BigData*, 5(1):181–188, 2020.
- 2017 Minsu Cho, Dohyun Kim, **Minseok Song***, G. Kim, C. Jung, and K. Kim, A development on a predictive model for buying unemployment insurance program based on public data. *Korean Journal of BigData*, 2(2):17–31, 2017.
- 2017 Gyudong Park, Jiyoung Kwak*, Sungho Han, **Minseok Song**, Dong Gu Choi, Hyeji Jang, and Dohyun Kim, Measuring the intrusive feeling of a lane keeping assistance system. *Journal of the Ergonomics Society of Korea*, 37(4):459–472, 2017.

- 2016 Yonghyuk Lee, Hojung Yi, **Minseok Song***, S. Lee, and S. Park, Process analysis in supply chain management with process mining: A case study. *Korean Journal of BigData*, 1(2):65–78, 2016.
- 2016 Yonghyuk Lee, **Minseok Song***, S. Ha, T. Baek, and S. Son, Big data cloud service for manufacturing process analysis. *Korean Journal of BigData*, 1(1):41–51, 2016.
- 2015 Hanna Yang and **Minseok Song***, Analyzing repair processes using process mining: A case study. *Journal of the Korean Institute of Industrial Engineers*, 41(1):86–96, 2015.
- 2012 S. Lee, Kwangryul Ryu*, and **Minseok Song**, Process improvement for pdm/plm systems by using process mining. *Korean CAD/CAM Journal*, 17:294–302, 2012.
- 2008 **Minseok Song***, C.W. Günther, W.M.P. van der Aalst, and J. Jung, Improving process mining with trace clustering. *Journal of the Korean Institute of Industrial Engineers*, 34(4):460–469, 2008.
- 2007 Injun Choi*, **Minseok Song**, Kwangmyung Kim, and Yonghyuk Lee, Analysis of social relations among organizational units derived from process models and redesign of organization structure. *Journal of the Korean Institute of Industrial Engineers*, 33(1):11–25, 2007.
- 2005 Jisoo Jung, **Minseok Song**, and Injun Choi*, A framework for integration of knowledge management and business process management. *IE Interfaces*, 18(1):52–62, 2005.
- 2004 **Minseok Song***, Jisoo Jung, Injoon Choi, and Jieun Cha, The study on a cooperative education system for logistics: the case study of international program in logistics management systems in technology university of eindhoven. *Journal of the Korean Society of Supply Chain Management*, 4(1):11–22, 2004.
- 2003 Injun Choi*, **Minseok Song**, and Chulsoon Park, Integrated process management: A new paradigm for the management of business processes. *Journal of Korea Information Science Society*, 21(10):36–44, 2003.

International Conference and Workshop Papers

- 2021 J. Lim, K. Kim, M. Cho, H. Baek, S. Kim, H. Hwang, S. Yoo, and **M. Song**, Deriving a sophisticated clinical pathway based on patient conditions from electronic health record data. *Lecture Notes in Business Information Processing*, 406 LNBIP:356–367, 2021 (**Best Paper Award, Scopus**).
- 2019 M. Cho, **M. Song**, S.-R. Yeom, I.-J. Wang, and B.-K. Choi, Developing process performance indicators for emergency room processes. *Lecture Notes in Business Information Processing*, 362 LNBIP:520–531, 2019 (**Scopus**).
- 2019 G. Park and **M. Song**, Prediction-based resource allocation using lstm and minimum cost and maximum flow algorithm. *Proceedings - 2019 International Conference on Process Mining, ICPM 2019*, pages 121–128, 2019.
- 2019 Y. Na, B. Kim, **M. Song**, and J. Kim, Resource-constrained project scheduling problem in a real-world heavy industry company. *2019 INFORMS Annual meeting (Seattle, Washington, USA), October 20-23*, 2019.
- 2018 D. Lee, E. Gorbacheva, **M. Song**, S.Y. Jung, and S. Yoo, Healthcare processes supported by blockchain: a literature review. *International Conference on Asia Pacific Industrial Engineering & Management Systems(APIEMS) 2018*, 2018.
- 2018 Y. Na, B. Kim, **M. Song**, and J. Kim, Critical path optimization for the shipbuilding industry. *2018 APIEMS Conference(Hong Kong), December 5-8*, 2018.
- 2017 M. Cho, **M. Song**, C. Müller, P. Fernandez, A. del Río-Ortega, M. Resinas, and A. Ruiz-Cortés, A new framework for defining realistic slas: An evidence-based approach. *Lecture Notes in Business Information Processing*, 297:19–35, 2017 (**Scopus**).

- 2017 C. Müller, P. Fernandez, **M. Song**, M. Resinas, and A. Ruiz-Cortés, Devising an sla-aware methodology to improve process performance. *Jornadas de Ciencia e Ingeniería de Servicios, Spain, July 19-21, 2017*.
- 2017 H. Jang, J. Kwahk, S. Han, **M. Song**, D. Choi, K. Park, D. Kim, Y. Won, and I. Jeong, Suggesting design method for performance evaluation system based on iot data: Considering ux. *Proceedings of the Tenth International Conference on Advances in Computer-Human Interactions 2017, 2017*.
- 2016 T.B.H. Tu and **M. Song**, Analysis and prediction cost of manufacturing process based on process mining. *ICIMSA 2016 - 2016 3rd International Conference on Industrial Engineering, Management Science and Applications, 2016*.
- 2015 M. Park, **M. Song**, T.H. Baek, S.Y. Son, S.J. Ha, and S.W. Cho, Workload and delay analysis in manufacturing process using process mining. *Lecture Notes in Business Information Processing*, 219:138–151, 2015 (**Scopus**).
- 2014 S. Son, B. Yahya, and **M. Song**, A manufacturing resource analysis in configurable manufacturing execution systems. *International Symposium on Green Manufacturing and Applications, Paradise Hotel, Busan, Korea, June 24-28, 2014*.
- 2014 M. Park, **M. Song**, and D. Kwon, Prediction for material usage using decision tree. *The 15th Asia Pacific Industrial Engineering and Management Systems, Ramada Plaza Jeju Hotel, Jeju, Korea, October 12-15, 2014*.
- 2014 M. Cho, **M. Song**, and S. Yoo, A systematic methodology for outpatient process analysis based on process mining. *Lecture Notes in Business Information Processing*, 181 LNBIP:31–42, 2014 (**Scopus**).
- 2014 H. Yang, M. Park, M. Cho, **M. Song**, and S. Kim, A system architecture for manufacturing process analysis based on big data and process mining techniques. *Proceedings - 2014 IEEE International Conference on Big Data, IEEE Big Data 2014*, pages 1024–1029, 2014.
- 2014 H. Yang and **M. Song**, Analyzing service processes using process mining: A case study. *The 15th Asia Pacific Industrial Engineering and Management Systems, Ramada Plaza Jeju Hotel, Jeju, Korea, October 12-15, 2014*.
- 2013 **M. Song**, B.N. Yahya, H.J. Cho, Y.J. Cho, , and K-Y. Ryu, Analysis of manufacturing processes with process mining in configurable manufacturing execution systems. *Proceedings on the 2013 International Symposium on Green Manufacturing and Applications, Hawaii, USA, June 25-29, 2013*.
- 2013 A. Kumar, R. Dijkman, and **M. Song**, Optimal resource assignment in workflows for maximizing cooperation. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 8094 LNCS:235–250, 2013 (**Scopus**).
- 2013 H. Jo, Y. Cho, S. Noh, K. Ryu, and **M. Song**, A study of a production service framework based on the manufacturing execution system. *17th International Conference on Industrial Engineering Theory, Applications and Practice, Pusan National University, Busan, Korea, October 6-9, 2013*.

- 2012 W. Van Der Aalst, A. Adriansyah, A.K.A. De Medeiros, F. Arcieri, T. Baier, T. Blickle, J.C. Bose, P. Van Den Brand, R. Brandtjen, J. Buijs, A. Burattin, J. Carmona, M. Castellanos, J. Claes, J. Cook, N. Costantini, F. Curbera, E. Damiani, M. De Leoni, P. Delias, B.F. Van Dongen, M. Dumas, S. Dustdar, D. Fahland, D.R. Ferreira, W. Gaaloul, F. Van Geffen, S. Goel, C. Günther, A. Guzzo, P. Harmon, A. Ter Hofstede, J. Hoogland, J.E. Ingvaldsen, K. Kato, R. Kuhn, A. Kumar, M. La Rosa, F. Maggi, D. Malerba, R.S. Mans, A. Manuel, M. McCreesh, P. Mello, J. Mendling, M. Montali, H.R. Motahari-Nezhad, M. Zur Muehlen, J. Munoz-Gama, L. Pontieri, J. Ribeiro, A. Rozinat, H. Seguel Pérez, R. Seguel Pérez, M. Sepúlveda, J. Sinur, P. Soffer, **M. Song**, A. Sperduti, G. Stilo, C. Stoel, K. Swenson, M. Talamo, W. Tan, C. Turner, J. Vanthienen, G. Varvaressos, E. Verbeek, M. Verdonk, R. Vigo, J. Wang, B. Weber, M. Weidlich, T. Weijters, L. Wen, M. Westergaard, and M. Wynn, Process mining manifesto. *Lecture Notes in Business Information Processing*, 99 LNBIP(PART 1):169–194, 2012 (**Scopus**).
- 2011 H-G. Woo and **M. Song**, A structural matching approach to managing large business process models. *Proceedings on 41th International Conference on Computers & Industrial Engineering, University of South California, Los Angeles, October 23-25, 2011*.
- 2010 W.M.P. Van Der Aalst, M. Pesic, and **M. Song**, Beyond process mining: From the past to present and future. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 6051 LNCS:38–52, 2010 (**Scopus**).
- 2009 **M. Song**, C.W. Günther, and W.M.P. Van Der Aalst, Trace clustering in process mining. *Lecture Notes in Business Information Processing*, 17 LNBIP:109–120, 2009 (**Scopus**).
- 2009 H.A. Reijers, **M. Song**, H. Romero, U. Dayal, J. Eder, and J. Koehler, A collaboration and productiveness analysis of the bpm community. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 5701 LNCS:1–14, 2009 (**Scopus**).
- 2009 R. S. Mans, M. H. Schonenberg, **M. Song**, W. M. P. van der Aalst, and P. J. M. Bakker, Application of process mining in healthcare – a case study in a dutch hospital. *Biomedical Engineering Systems and Technologies. BIOSTEC 2008. Communications in Computer and Information Science*, 25:425–438, 2009 (**Scopus**).
- 2009 A. Koschmider, **M. Song**, and H.A. Reijers, Social software for modeling business processes. *Lecture Notes in Business Information Processing*, 17 LNBIP:666–677, 2009 (**Scopus**).
- 2009 A. Koschmider, **M. Song**, and H.A. Reijers, Advanced social features in a recommendation system for process modeling. *Lecture Notes in Business Information Processing*, 21 LNBIP:109–120, 2009 (**Scopus**).
- 2008 R.S. Mans, M.H. Schonenberg, **M. Song**, W.M.P. Van Der Aalst, and P.J.M. Bakker, Process mining in healthcare - a case study. *HEALTHINF 2008 - 1st International Conference on Health Informatics, Proceedings*, 1:118–125, 2008.
- 2007 T. Weijters, W.M.P. van der Aalst, B. van Dongen and C.W. Günther, R. Mans, A.K.A. de Medeiros, A. Rozinat, **M. Song**, and H.M.W. Verbeek, Process mining with prom. *Proceedings of the 19th Belgian-Dutch Conference on Artificial Intelligence (BNAIC 2007)*, 2007.
- 2007 W.M.P. Van Der Aalst, B.F. Van Dongen, C.W. Günther, R.S. Mans, A.K. De Alves Medeiros, A. Rozinat, V. Rubin, **M. Song**, H.M.W. Verbeek, and A.J.M.M. Weijters, Prom 4.0: Comprehensive support for real process analysis. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 4546 LNCS:484–494, 2007 (**Scopus**).
- 2007 W.M.P. Van Der Aalst, P.C.W. Van Den Brand, B.F. Van Dongen, C.W. Günther, R.S. Mans, A.K. Alves De Medeiros, A. Rozinat, **M. Song**, H.M.W. Verbeek, and A.J.M.M. Weijters, Business process analysis with prom. *WITS 2007 - Proceedings, 17th Annual Workshop on Information Technologies and Systems*, pages 223–224, 2007.

- 2007 **M. Song** and W.M.P. Van Der Aalst, Supporting process mining by showing events at a glance. *WITS 2007 - Proceedings, 17th Annual Workshop on Information Technologies and Systems*, pages 140–145, 2007.
- 2007 H.A. Reijers, **M. Song**, and B. Jeong, On the performance of workflow processes with distributed actors: Does place matter? *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 4714 LNCS:32–47, 2007 (**Scopus**).
- 2007 A.K. Alves De Medeiros, C. Pedrinaci, W.M.P. Van Der Aalst, J. Domingue, **M. Song**, A. Rozinat, B. Norton, and L. Cabral, An outlook on semantic business process mining and monitoring. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 4806 LNCS(PART 2):1244–1255, 2007 (**Scopus**).
- 2004 W.M.P. Van Der Aalst and **M. Song**, Mining social networks: Uncovering interaction patterns in business processes. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 3080:244–260, 2004 (**Scopus**).
- 2003 I. Choi, J. Jung, **M. Song**, and M. Jang, A research framework for process knowledge management. *Proceedings of 2003 International Conference on Computers & Industrial Engineering, San Francisco, February 2-4, 2003*.
- 2001 I. Choi, C. Park, and **M. Song**, Process engineering and an xml-based process definition language. *2001 International Joint Conference on Computer & Industrial Engineering and IEMS, Cocoa Beach, Florida, March 5-7, 2001*.

Domestic Conference and Workshop Papers

- 2021 Y. Jang, Y. Jang, D. Lee, **M. Song**, and S. Kim, Process layout improvement using cross minimization. *In KIIE conference, Dongkuk University, Seoul, Korea, November 12, 2021*.
- 2021 W. Hwang, J. Park, and **M. Song**, Fashion outfit recommendation using multi bi-lstm models. *In KORMS/KIIE conference, International Convention Center, Jeju, Korea, June 2-5, 2021*.
- 2021 M. Jeong and **M. Song**, Similar situations search based on coordinate data of players. *In KIIE conference, Dongkuk University, Seoul, Korea, November 12, 2021*.
- 2021 M. Jeong and **M. Song**, Football strategy analysis using video data. *Workshop of the Korea BigData Society, Silla University, Busan, Korea, May 1, 2021*.
- 2021 D. Lee and **M. Song**, Blockchain-based health information exchange using ring signature & stealth address. *In KORMS/KIIE conference, International Convention Center, Jeju, Korea, June 2-5, 2021*.
- 2021 D. Lee and **M. Song**, Blockchain-based federated development of clinical pathway. *In Korea Bigdata Society Conference, Seoul, Korea, October 29, 2021*.
- 2021 H. Kim, H. Ryu, M. Eom, J. Shin, S. Lee, D. Lee, B. Kim, **M. Song**, Y. Ryu, S. Kim, and H. Lee, Optimizing hydrogen station location for mobility. *In KORMS/KIIE conference, International Convention Center, Jeju, Korea, June 2-5, 2021*.
- 2021 H. Kim, H. Kim, D. Lee, J. Shin, B. Kim, **M. Song**, S. Lee, H. Ryu, S. Kim, Y. Ryu, and H. Lee, Off-site/on-site refueling station layout optimization for optimal hydrogen supply path design. *In Korea Hydrogen and New Energy Society Fall Conference, Jeju, Korea, October 20-22, 2021*.
- 2021 H. Kim, H. Kim, D. Lee, J. Shin, B. Kim, **M. Song**, S. Lee, H. Ryu, S. Kim, Y. Yu, and H. Lee, Deployment optimization of off-site/on-site hydrogen refueling stations. *In 2021 Fall Conference of the Korean Hydrogen & New Energy Society, Jeju, Korea, 2021*.

- 2020 S. Park and **M. Song**, Manufacturing process simulation using event-log. *In Society for Computer Design and Engineering, Online Conference, Korea, August 17-18, 2020 (Best Paper Award)*.
- 2019 S. Park and **M. Song**, Bhs(baggage handling system) analysis using process mining. *In KORMS conference, Korea Aerospace University, Seoul, Korea, October 25, 2019*.
- 2019 M. Cho, J. Lim, **M. Song**, S. Yoo, K. Kim, and H. Baek, Deriving cp using ehr(electronic health records) data. *In The Korean Society of Medical Informatics, Korea University College of Medicine, Seoul, Korea, July 11-12, 2019 (Best Paper Award)*.
- 2019 J. Seo, S. Kim, **M. Song**, H. Lee, and Y. Park, Fsm based feature engineering in purchase prediction. *In KORMS/KIIE conference, Gwangju Kimdaejung Convention Center, Gwangju, Korea, April 10-13, 2019*.
- 2019 J. Lim, W. Hwang, M. Cho, **M. Song**, S. Yoo, and G. Kim, Cp development based on patient care data using matching rate. *In KORMS/KIIE conference, Gwangju Kimdaejung Convention Center, Gwangju, Korea, April 10-13, 2019*.
- 2019 H. Cho, D. Kim, D. You, **M. Song**, N. Choi, C. Yoon, and J. Park, Prediction of gas usages based on machine learning. *In KIIE Conference, Seoul National University, Seoul, Korea, November 8, 2019*.
- 2019 G. Park, M. Cho, **M. Song**, and J. Lee, Data analysis using logistics data warehouse in semiconductor manufacturing. *In KORMS/KIIE conference, Gwangju Kimdaejung Convention Center, Gwangju, Korea, April 10-13, 2019*.
- 2019 D. Lee and **M. Song**, An application of blockchain technology in healthcare industry. *In KORMS/KIIE conference, Gwangju Kimdaejung Convention Center, Gwangju, Korea, April 10-13, 2019*.
- 2018 J. Lim, **M. Song**, M. Cho, S. Yoo, K. Kim, H. Baek, and S. Kim, Deriving cp variations by patient characteristics using medical outcome analysis. *In KORMS/KIIE conference, Gyeongju Hotel Hyundai, Gyeongju, Korea, April 04-07, 2018*.
- 2018 G. Park, M. Cho, **M. Song**, and J. Lee, Deriving an optimal routing for yield enhancement in semiconductor manufacturing. *In KORMS/KIIE conference, Gyeongju Hotel Hyundai, Gyeongju, Korea, April 04-07, 2018*.
- 2018 M. Lee, J. Kwak, S. Han, **M. Song** D. Jeong, M. Cho, D. Kim, and D. Lee, Customer requirement analysis of intelligent services in iot environment. *In Spring Conference of the Ergonomics Society of Korea, Jeju Phoenix Resort, Jeju, Korea, May 16-19, 2018*.
- 2017 K. Park, S. Han, J. Kwak, **M. Song**, D. Choi, H. Jang, D. Kim, Y. Won, and I. Jeong, Performance indicators in lkas. *In Spring Conference of the Ergonomics Society of Korea, Jeju Kensington Resort, Jeju, Korea, April 27-30, 2017*.
- 2016 Y. Lee and **M. Song**, A reference model for big data analysis in shipbuilding. *In KIIE Conference, Korea University, Seoul, Korea, November 19, 2016*.
- 2016 T. Hong and **M. Song**, Process mining-driven efficient manufacturing cost management. *In KORMS/KIIE/ESK/KSIE/KSS Conference, International Convention Center, Jeju, Korea, April 13-16, 2016*.
- 2016 M. Cho, **M. Song**, and S. Yoo, Personal clinician scheduling using discrete event simulation based on process mining. *In KORMS/KIIE/ESK/KSIE/KSS Conference, International Convention Center, Jeju, Korea, April 13-16, 2016*.
- 2016 H. Yi, M. Cho, D. Kim, and **M. Song**, An application of process mining on business process re-engineering: A case study? *In KORMS/KIIE/ESK/KSIE/KSS Conference, International Convention Center, Jeju, Korea, April 13-16, 2016*.
- 2015 M. Cho, **M. Song**, and S. Yoo, A method for developing clinical pathway using event logs. *In KORMS/KIIE/ESK/KSIE/KSS Conference, Ramada Hotel, Jeju, Korea, April 8-11, 2015*.

- 2014 Y. Shim, M. Cho, **M. Song**, and S. Yoo, Delta analysis for organizational environment using process mining: A case study. *In KORMS/KIIE conference, Bexco, Busan, Korea, May 16-17, 2014.*
- 2014 H. Yang, Y. Yoon, and **M. Song**, Production efficiency and process quality analysis for manufacturing process based on event logs. *In The Korean Society of Manufacturing Technology Engineers, Jeju KAL Hotel, Jeju, Korea, September 29-30, 2014.*
- 2014 H. Yang, S. Hong, and **M. Song**, Process improvement based on best practices and social network analysis. *In KORMS/KIIE conference, Bexco, Busan, Korea, May 16-17, 2014.*
- 2013 Y. Lee, B. N. Yahya, H. Cho, Y. Cho, K. Ryu, and **M. Song**, Development of manufacturing process analysis tool for c-mes. *In the Korean Society for Precision Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, Korea, October 24-26, 2013.*
- 2013 S. Son, **M. Song**, Y. Cho, H. Cho, and B. Yahya, Developing a simulation model for manufacturing process using process mining. *In The Korean Society of Manufacturing Technology Engineers, Bexco, Busan, Korea, April 25-26, 2013.*
- 2013 S. Hong, H. Yang, S. Kim, and **M. Song**, Business performance analysis using process mining. *In KIIE Conference, Sungkyunkwan University, Seoul, Korea, November 15, 2013.*
- 2013 M. Cho, **M. Song**, and S. Yoo, Payment process analysis based on process mining. *In the Korea Intelligent Information System Society Conference, Sogang University, Seoul, Korea, June 1, 2013.*
- 2013 M. Cho, **M. Song**, and S. Yoo, Healthcare process simulation based on process mining. *In KORMS/KIIE conference, The Ocean Resort, Yeosu, Korea, May 24-25, 2013.*
- 2013 H. Lee, K. Ryu, **M. Song**, Y. Cho, and H. Cho, Process model based function recommendation to support design of configurable manufacturing support systems. *In the Korean Society of CAD/CAM Engineers Conference, Phoenix Park, Kangwon, Korea, January 30 - February 1, 2013.*
- 2013 E. Kim, S. Kim, M. Cho, **M. Song**, and S. Yoo, Simulation of optimal number of outpatient payment kiosk estimation using process mining. *In The Korean Society of Medical Informatics, Asan Hospital, Seoul, Korea, June 13-14, 2013 (Best Paper Award).*
- 2012 S. Son, H. Moon, J. Kim, and **M. Song**, Trade exhibition data analysis using process mining. *In KIIE Conference, Hanyang University ERICA Campus, Kyunggi, Korea, November 2, 2012.*
- 2012 H. Yang and **M. Song**, Trace clustering with dimensionality reduction techniques. *In KORMS/KIIE conference, Hyndai hotel, Gyeongju, Korea, May 10-11, 2012.*
- 2012 B. N. Yahya, **M. Song**, H. Bae, D. Jeon, S. Sul, and R. Asriana, Port logistics data analysis using process mining. *In KORMS/KIIE Co-conference, Seoul National University of Science and Technology, Seoul, Korea, November 1, 2012.*
- 2012 **M. Song**, Y. Lee, M. Park, S. Kim, and S. Yoo, Hospital data analysis using process mining. *In KORMS/KIIE Co-conference, Seoul National University of Science and Technology, Seoul, Korea, November 1, 2012.*
- 2012 **M. Song**, S. Son, K. Ryu, S. Lee, Y. Cho, and H. Cho, A method for gathering logs from c-mes. *In the Korean Society of CAD/CAM Engineers Conference, Phoenixpark Convention Center, Pyungchang, Korea, February 1-3, 2012.*
- 2012 **M. Song**, I. Jung, Y. Cho, and H. Cho, Progress of production data analysis using process mining. *In KORMS/KIIE conference, Hyndai hotel, Gyeongju, Korea, May 10-11, 2012.*
- 2012 Y. Lee, S. Kim, and **M. Song**, Ecm (enterprise content management) system analysis using process mining. *In the Korean BI Data Mining Conference, Bexco, Busan, Korea, November 30 - December 1, 2012.*
- 2011 **M. Song**, D. Kim, K. Ryu, S. Kim, Y. Cho, and H. Cho, Study on the function of manufacturing process monitoring in c-mes. *In the Korean Society of Industrial Information Systems, Gyeongju, Korea, October 26-28, 2011.*

- 2011 **M. Song**, D. Kim, K. Ryu, Y. Cho, and H. Cho, Manufacturing process analysis with process mining in c-mes. *In the Korean Manufacturing System conference, Daejeon, Korea, October 13-15, 2011.*
- 2010 **M. Song**, Y.S. Kang, C.H, and Ryu, Business process analysis using process mining technique. *In the Korean Industrial Information Society, UNIST, Ulsan, Korea, May 28-29, 2010.*
- 2004 **M. Song**, W.M.P. van der Aalst, and I. Choi, Mining social networks from business process log. *In KORMS/KIIE conference, Jeonbuk Univ., Jeonjoo, Korea, May 21-22, 2004.*
- 2003 I. Choi, **M. Song**, and J. Jung, A study on framework for process knowledge management. *In KORMS/KIIE conference, Handong Univ., Pohang, Korea, May 16-17, 2003.*
- 2000 I. Choi, G. Sim, and **M. Song**, Process packaging in knowledge management system. *In KORMS/KIIE conference, Kyungnam Univ., Changwon, Korea, April 20-21, 2000.*
- M. Eom J. Shin S. Lee D. Lee B. Kim **M. Song** Y. Yu S. Kim H. Lee H. Kim, H. Ryu, Hydrogen refueling stations deployment plan for hydrogen mobility. *In KORMS/KIIE conference, International Convention Center, Jeju, Korea, June 2-5.*

Research Grants

Research Grants Summary

As a principal investigator, 33 competitive grants totaling \$6,140,000 USD from the National Science Foundation of Korea, Ministry of Trade, Industry & Energy, Samsung Electronics, POSCO, etc.

as a principal investigator

- Mar. 2021 - **(Mid-Career Researcher Program)** Clinical Digital Twin Model Mining and Process Redesign
 Feb. 2024 Method based on the OMOP Common Data Model, National Research Foundation Of Korea, \$500,000 USD.
- Mar. 2019 - Industrial AI HRD (Master-PhD Program), Minister of MTIE (Ministry of Trade, Industry and
 Feb. 2024 Energy), \$3,208,000 USD.
- Jun. 2020 - Development of Process Layout Algorithm, Puzzle Data, \$8,300 USD.
 Dec. 2021
- Jan. 2021 - Improvement of AI-based Recommendation System for Curated Retailing Services, Samsung C&T,
 Nov. 2021 \$75,000 USD.
- Jun. 2020 - Development of Process Mining Consulting Framework II, Puzzle Data, \$16,500 USD.
 Sep. 2021
- May 2020 - Development of AI Open Innovation Platform in Energy Industry, H-Energy, \$50,000 USD.
 Nov. 2021
- Dec. 2010 - E-Sports Data Analysis, OP.GG, \$16,500 USD.
 Mar. 2021
- Jan. 2019 - Bottleneck Analysis with Process Mining in Steel Manufacturing, POSCO, \$39,400 USD.
 Oct. 2020
- Jun. 2019 - Development of Cloud-based Personal Health Care Platform, Korea Technology and information
 May 2020 Promotion Agency for SMEs, \$23,700 USD
- Nov. 2019 - Development of AI-based Recommendation System for Curated Retailing Services, Samsung
 Apr. 2020 C&T, \$95,833 USD.
- Mar. 2019 - Bottleneck Analysis in FAB, Samsung Electronics, \$55, 000 USD.
 Jan. 2020
- Jan. 2019 - Prediction with Process Mining in Steel Manufacturing, POSCO, \$64,400 USD.
 Nov. 2019

- May 2019 - Development of Campus Micro-grid System, POSCO, \$31, 600 USD.
Oct. 2019
- Jan. 2018 - Manufacturing Process Modeling and Scheduling Optimization using CPM, Hyundai Heavy Industry, \$91,700 USD.
Apr. 2019
- Jan. 2018 - Feature Extraction using Process Mining in Digital Marketing, Concentrix Korea, \$16,700 USD.
Jun. 2019
- Feb. 2018 - Best path recommendation using AI in FAB, Samsung Electronics, \$55,700 USD.
Dec. 2018
- July 2017 - Application of Process Mining in Heavy Industries, Samsung Heavy Industry, \$8,300 USD.
Aug. 2017
- Feb. 2017 - Best Resource Model Mining in Semiconductor Manufacturing, Samsung Electronics, \$74,200 USD.
Dec. 2017
- Jun. 2016 - **(Early-career Researcher Program)** Development of Clinical Pathways based on Data/Process Mining, National Research Foundation of Korea, \$250, 000 USD.
May 2019
- Jun. 2016 - Development and verification of the big data strategic model for ship & offshore production, National Information Society Agency, \$54,100 USD.
Nov. 2016
- Sep. 2016 - Development of Process Mining Consulting Framework, Puzzle Data, \$11,200 USD.
Oct. 2016
- Dec. 2014 - **(EU Horizon 2020 Project)** Propelling Business Process Management by Research and Innovation Staff Exchange, National Research Foundation of Korea, \$166,700 USD.
Nov. 2018
- May 2011 - Case handling process mining, National Research Foundation of Korea, \$145,000 USD.
Apr. 2016
- May 2015 - Big data cloud service for manufacturing process analysis, National Information Society Agency, \$121,000 USD.
Dec. 2015
- Jun. 2013 - Platform development on the customer feedback analysis and the service configuration and evaluation technique for the effective performance measure of B2C service industry, Ministry of Trade, Industry & Energy, \$433,300 USD.
May 2016
- May 2013 - Software development of the automated business process analysis on the enterprise bigdata for the business task and collaboration management, Ministry of Trade, Industry & Energy, \$200,000 USD.
Apr. 2015
- July 2011 - Process Analysis in c-MES system, KITECH, \$166,700 USD.
Dec. 2014
- Apr. 2013 - Outpatient process analysis and improvement, Boramae Seoul National University Hospital, \$16,500 USD.
Sep. 2013
- Jan. 2013 - Manufacturing process analysis in MES systems (Samsung Electro-Mechanics), SungKunKwan Univeristy, \$12,500 USD.
Oct. 2013
- Mar. 2011 - Process analysis in c-MES system, KITECH, \$16,500 USD.
May 2011
- Apr. 2010 - Korean IBS (Integrated Bridge System) Development, Ministry of Knowledge Economy, \$41,700 USD.
Mar. 2011
- Apr. 2010 - Development of University Strategic Plan, UNIST, \$57,000 USD.
Dec. 2010
- Jan. 2010 - Development of Process Mining Framework, UNIST, \$16,700 USD.
Dec. 2010
- [as a CO-PI or a researcher \(selected\)](#)
- Dec. 2018 - The revolutionary athlete data integration technology for national football performance innovation, Korea Institute of Sport Science, \$166,700 USD (CO-PI).
Dec. 2022

- Jun. 2018 - Blockchain Platform with Business Models towards Cross-domain Inter-operability, Ministry of Science and ICT, \$223,700 USD (CO-PI).
- Dec. 2021
- Sep. 2013 - Development of a CP discovery & management system, Budang Seoul National University
- July 2014 Hospital.
- July 2011 - Development of a root cause failure analysis method for ship telematics, Ministry of Education & Science and Technology.
- Jun. 2013
- Apr. 2011 - An Exploration on Models for Software Industries Development of Korea, Ministry of Knowledge Economy.
- Sep. 2011
- Sep. 2010 - (EnviMining) Product Design for Environment using Real Data-based Process Mining Methodology, National Science Foundation of Korea.
- Aug. 2011
- Sep. 2010 - Remote Laser Welding System Navigator for Eco & Resilient Automotive Factories (Participation in EU FP7), Ministry of Knowledge Economy.
- Aug. 2011
- Mar. 2006 - Process mining: Development tools for discovering cases-handling processes (www.processmining.org), The Technology Foundation STW.
- Aug. 2009
- Oct. 2005 - Planning Study for Construction of Researcher Network and Knowledge Map, Science & Engineering Foundation.
- Feb. 2006
- Mar. 2003 - Development of Web-based Process Execution Engine (Brain Korea 21 Project), Ministry of Education.
- Feb. 2006
- Mar. 2002 - Development of Korea STEP-NC system, Institute of Science & Technology Evaluation and Planning.
- Jun. 2005

Patents

- Apr. 4, 2020 Soonik Hong, Sookyoung Son, Dongha Lee, Minseok Song, "Process management method", 1021067090000 (registered).
- Sep. 30, 2019 Jinyoun Lee, Minseok Song, Gyunam Park, Byungeen Lee, Minsu Cho, "Method of analyzing path of wafers lots produced from facilities in semiconductor manufacturing, and computing system performing the same", 1020190121079.
- Aug. 7, 2018 Sookyoung Son, Soonik Hong, Minseok Song, "Modeling apparatus of shipbuilding and offshore engineering process, and computer-readable storage medium", 1020180 091767.
- Apr. 25, 2018 Sookyoung Son, Minseok Song, "Process based on process mining", 1020180047883.
- Sep. 22, 2016 Minseok Song, "Method and apparatus for process model discovery using process mining", 1016608920000 (registered).
- Mar. 3, 2016 Minseok Song, Minsu Cho, "Process simulation model discovery system of outpatient consultation and process simulation model discovery method", 1016019160000 (registered).
- Dec. 7, 2012 Bernardo Yahya, Hyurim Bae, Minseok Song, "Process analysis method and system using distance", 1020120141612 (registered).
- Sep. 26, 2001 Mooyoung Jung, Minseok Song, Somin Lee, Sooyoun Kim, "Apparatus and system for preventing theft of equipments", 1003079000000 (registered).

Professional Associations

- 2015 - 2021 **Member**, IEEE Task Forces on Process Mining.
- 2016 - 2021 **Associated partner**, European Research Center for Information Systems (ERCIS).
- 2021 - 2022 **Board member**, The Korean Society of Management Information Systems (KMIS).
- 2019 - 2021 **Board member**, The Society for Computational Design and Engineering.
- 2016 - 2021 **Board member**, The Korean Intelligent Information System Society.
- 2016 - 2021 **Editorial board member**, The Korea Bigdata Society.

2019 - 2020 **Board member**, The Korean Institute of Industrial Engineers.

Department, university and community services

2019 - 2023 **Member**, University Admissions Committee, POSTECH.

2021 - 2023 **Member**, University Planning Committee, POSTECH.

2018 - 2022 **Head**, Open Innovation Bigdata Center, POSTECH.

2021 **Co-Organizer**, POSTECH-UNIST-KAIST Data Science Competition, POSTECH.

2020 - 2021 **Organizer**, OIBC Bigdata Competition, POSTECH.

2014 - 2015 **Head**, Bigdata Center, UNIST.

2014 - 2015 **Dean**, Academic Information Affairs, UNIST.

2012 - 2013 **Dean (interim)**, School of Business Administration, UNIST.