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Education Background

02/2017—01/2019 National Tsing Hua University, Taiwan, China, Doctorate.

06/2013—06/2015 Amity University, India, Masters in Engineering.

06/2009—06/2011 University of Delhi, India, Masters in Science.

12/2005—12/2008 Kuvempu University, India, Bachelor of Science.

Work Experience

04/2020—Present Assistant Researcher, Sino US Global Logistics Institute, Shanghai Jiao Tong University.

09/2019—04/2020 Lecturer (Postdoctoral), Sino US Global Logistics Institute, Shanghai Jiao Tong University.

02/2019—08/2019 Adjunct Assistant Professor, National Tsing Hua University, Taiwan, China.

04/2019—08/2019 Postdoctoral Fellowship, Ministry of Science and Technology, Taiwan, China.

07/2018—08/2018 Lecturer, National Tsing Hua University, Taiwan, China.

02/2016—02/2017 Research Assistant, National Tsing Hua University, Taiwan, China.

01/2012—07/2013 Engineer, Altran Technologies (Aricent), Nokia Siemens Network, Finland.

Research Interests

Emerging technologies management, Technology decoupling, Intellectual property analytics, Industrial Immersive technologies, Industry 4.0, Intelligent supply chain and sustainability.

Funding

Principle investigator：

1. Intelligent digital supply chain orchestration and sustainability, Chinese Science Foundation (2019 Talent-Introduction Program), Advisor: Prof. Dali Zhang，2019—2021.

Investigation team member:

1. Virtual reality exposure therapy study, Chang Gung Hospital Taipei，Roles: Project coordinator and development team leader, Principle investigator: Prof. Amy Trappey，2019—2021.

2. Intelligence for competitive advantage study, Fortune Electric Company，Roles: Initial proof of concept and development team building, Principle investigator: Prof. Amy Trappey，2019—2020.

3. Intelligent conversational technologies specifications analysis, Information Industry Council Taiwan，Roles: Project team member, Principle investigator: Prof. Amy Trappey，2018.

4. Original Equipment Manufacturer International Branding Research, Taiwan Economic Research Institute，Roles: Project team leader, Principle investigator: Prof. Charles Trappey，2017.

5. Development of Unsupervised Machine Learning Approaches for Intellectual Property Analysis, Ministry of Science and Technology Taiwan，Roles: Project member, Principle investigator: Prof. Amy Trappey，2016-2018.

Publications

Journals：(* Corresponding author)

1. Yadav, V. S., Singh, A. R., Raut, R. D., & Govindarajan, U. H.* (2020). Blockchain Technology Adoption Barriers in The Indian Agricultural Supply Chain: An Integrated Approach. Resources, Conservation & Recycling (Early Access, DOI: 10.1016/j.resconrec.2020.104877).

2. Trappey, A. J.*, Trappey, C. V., Chang, C. M., Shih, X. Y., Govindarajan, U. H., Gupta, N., & Su, I. A. (2020). Behavioral Therapy for Phobias Using Immersive Virtual Reality Technology. Journal of the Chinese Society of Mechanical Engineers, vol. 41, no. 2, pp 131~140.

3. Raut, R. D., Gotmare, A., Narkhede, B. E., Govindarajan, U. H.*, & Bokade, S. U. (2020). Enabling Technologies for Industry 4.0 Manufacturing and Supply Chain: Concepts, Current Status, and Adoption Challenges. IEEE Engineering Management Review (Early Access, DOI: 10.1109/EMR.2020.2987884).

4. Trappey, A. J., Trappey, C. V., Govindarajan, U. H.*, & Sun, J. J. (2019). Patent Value Analysis Using Deep Learning Models - The Case of IoT Technology Mining for Manufacturing Industries. IEEE Transactions on Engineering Management (Early Access, DOI: 10.1109/TEM.2019.2957842).

5. Govindarajan, U. H., Trappey, A. J., & Trappey, C. V. (2019). Intelligent Collaborative Patent Mining Using Excessive Topic Generation. Advanced Engineering Informatics, vol. 42, pp. 100955.

6. Govindarajan, U. H.*, Sheu, D. D., & Mann, D. (2019). Review of Systematic Software Innovation Using TRIZ. International Journal of Systematic Innovation, vol. 5, pp. 72-90, ISSN: 2077-7973.

7. Trappey, A. J., Trappey, C. V., Govindarajan, U. H.*, & Jhuang, A. C. (2018). Construction and Validation of an Ontology-based Technology Function Matrix: Text Mining of Cyber Physical System Patent Portfolios. World Patent Information, vol. 55, pp. 19-24.

8. Govindarajan, U. H., Trappey, A. J., & Trappey, C. V. (2018). Immersive Technology for Human Centric Cyber Physical Systems in Complex Manufacturing Processes: A Comprehensive Overview of Global Patent Profile Using Collective Intelligence. Complexity.

9. Trappey, A. J., Trappey, C. V., Govindarajan, U. H., Sun, J. J., & Chuang, A. C. (2016). A Review of Technology Standards and Patent Portfolios for Enabling Cyber-Physical Systems in Advanced Manufacturing. IEEE Access, vol. 4, pp. 7356-7382.

10. Trappey, A. J., Trappey, C. V., Govindarajan, U. H., Chuang, A. C., & Sun, J. J. (2016). A Review of Essential Standards and Patent Landscapes for The Internet of Things: A Key Enabler for Industry 4.0. Advanced Engineering Informatics, vol. 33, pp. 208-229.

Conferences：(* Corresponding author)

1. Li, P., Zhao, L., Li, D., & Govindarajan, U. H.* (2020). An Evaluation of China's Coal Supply Sustainability Based on the Development of MNGM-ES-BPNN Model. 2020 International Conference on Resource Sustainability -Sustainable Urbanisation in the BRI Era, Ningbo, China [Accepted].

2. Yao, M. J., Govindarajan, U. H.*, & Zhang, D. (2020). Augmented Interface Assisted Open-shelf FMCG Decision Support. In Proceedings of the 24th International Conference on Computer Supported Cooperative Work in Design, Dalian, China [Accepted].

3. Raut, R. D., Lee, C. H., Govindarajan, U. H.*, & Zhang, D. (2020). An Augmented Reality System for Waste Segregation Assistance. In Proceedings of the 24th International Conference on Computer Supported Cooperative Work in Design, Dalian, China [Accepted].

4. Trappey, A. J., Trappey, C. V., Govindarajan, U. H.*, Chang, C. M., Khera, N., & Kuo, R. T. (2020). A Treatment Outline for Driving Related Post-Traumatic Stress Disorder Using Virtual Reality Exposure Therapy. In Proceedings of the 24th International Conference on Computer Supported Cooperative Work in Design, Dalian, China [Accepted].

5. Narkhede, B., Raut, R.*, Narwane, V., Govindarajan, U. H., Siddavatam, I., & Samant, A. (2020). Cloud-Based Manufacturing Service Selection Based on Simulation Approaches. In Proceedings of the 24th International Conference on Computer Supported Cooperative Work in Design, Dalian, China [Accepted].

6. Raut, R., Priyadarshinee, P., Narkhede, B.*, & Govindarajan, U. H. (2020). Instrument Development for IoT Adoption. In Proceedings of the 24th International Conference on Computer Supported Cooperative Work in Design, Dalian, China [Accepted].

7. Trappey, A. J., Trappey, C. V., & Govindarajan, U. H.* (2019). Knowledge Extraction of RfQ Engineering Documents for Smart Manufacturing. In Proceedings of the 22nd International Conference on Advances in Materials & Processing Technologies, Taipei, Taiwan, China.

8. Hong, N. J., Govindarajan, U. H., & Trappey, A. J. (2019). Comprehensive Technology Function Product Matrix for Intelligent Chatbot Patent Mining. In Proceedings of the 2019 IEEE International Conference on Systems, Man, and Cybernetics, Bari, Italy.

9. Govindarajan, U. H.*, Trappey, A. J., & Trappey, C. V., (2019). 360° Technology as a Gateway for Immersive Psychotherapy Applications: An Intelligent Patent Mining Analysis. In Proceedings of the 15th International Conference on Data Science (ICDATA), Nevada, USA.

10. Govindarajan, U. H.*, Trappey, A. J., Trappey, C. V., Yeh, L. C., & Bafila, A. S. (2018). Excessive Topic Generation: A Pre-processing Method for Collective Intelligence and

Relationship Mining. In Proceedings of the 19th Asia Pacific Industrial Engineering & Management Systems Conference (APIEMS), Hong Kong, China.

11. Trappey, A. J., Trappey, C. V., Govindarajan, U. H.*, & Sharma, A. (2018). Conversational Service Bot Specifications for Advanced Manufacturing Applications. In Proceedings of the 2018 IEEE International Conference on Advanced Manufacturing (ICAM), Yunlin, Taiwan, China [Best Paper Award].

12. Govindarajan, U. H.*, Trappey, A. J., & Trappey, C. V. (2018). Topics and Trends in Industrial Internet of Things (IIoT)- A 10 Year Patent Data Outlook. In Proceedings of the 29th Annual Conference of the International Information Management Association (IIMA), Texas, USA.

13. Trappey, A. J., Trappey, C. V., Govindarajan, U. H.*, & Sun, J. J. (2018). Patent Quality Estimation Using Machine Learning – An Industrial Internet of Things Empirical Study. In Proceedings of the 2018 International Symposium on Semiconductor Manufacturing Intelligence (ISMI), Hsinchu, Taiwan, China. [Best Paper Award Finalist].

14. Trappey, A. J., Trappey, C. V., Govindarajan, U. H., & Gupta, A. (2017). OBM-centric Digital Marketing Development for High-tech Services – A Case Study. In Proceedings of the 8th International Conference on Internet Technologies & Society (ITS), Sydney, Australia.

15. Govindarajan, U. H.*, Trappey, A. J., & Kumar, G. (2017). Latent Dirichlet Allocation modeling for CPS Patent Topic Discovery. In Proceedings of the 1st International Conference on Industrial, Enterprise, and System Engineering (ICoIESE), Bandung, Indonesia.

16. Jhuang, A. C., Sun, J. J., Trappey, A. J., Trappey, C. V., & Govindarajan, U. H. (2017). Computer Supported Technology Function Matrix Construction for Patent Data Analytics. In Proceedings of the 2017 Computer Supported Cooperative Work in Design (CSCWD), Wellington, New Zealand.

17. Govindarajan, U. H.*, Trappey, A. J., & Trappey, C. V. (2016). Investigating Technology and Patent Portfolio of Lens-Less Cameras in the Context of Industry 4.0. In Proceedings of the

17th Asia Pacific Industrial Engineering & Management Systems Conference (APIEMS), Taipei, Taiwan, China. [Best Paper Award Finalist].

Teaching

10810IEEM316000： Data Base Management System.

10730IEEM580100： Academic Writing and Presentation Skills.

10620IEEM214000： Programming Design and Application.

10630IEEM314000： Data Structure.

Engagements

Editorial:

2020—Present Associate Editor, IET Collaborative Intelligent Manufacturing Journal.

2020—2021 Core Committee Member, IEEE International Conference on Computer Supported Cooperative Work in Design (IEEE CSCWD).

Priyadarshinee, P., Raut, R. D., Govindarajan, U. H., & Narkhede, B. E. (Guest Editors). Special Issue on Performance Evaluation of Sustainability Within The Data-Driven Supply Chains for The Agricultural Supply Chain. International Journal of Systems and Society, 2020.

Govindarajan, U. H., Singh, P. K., Raut, R. D., & Hong, W. C. (Guest Editors). Special Issue on Futuristic Technologies for Intelligent Manufacturing and Supply Chain Management. IET Collaborative Intelligent Manufacturing Journal, 2020.

Govindarajan, U. H., Trappey, A. J. C., Zhang, D., Lee, C. H., Chang, C. M., Narkhede, B. E., & Raut, R. D. (Guest Editors). Special Session on Computer Supported Cooperative Systems Incorporating Immersive Technologies (3D, 360°, VR, AR, MR, Holography, Cave, Telepresence, Digital Twin, and BCI). IEEE International Conference on Computer Supported Cooperative Work in Design, (IEEE CSCWD 2020-2021).

Chaired sessions:

08/2019 Session Chair (Health Informatics & Applications Track), International Conference on Artificial Intelligence (ICAI 2019), Nevada, USA.

12/2018 Session Chair (Artificial Intelligence Track), University of Hong Kong, China.

Keynote speech:

11/2019 Seize this opportunity: The rise of immersive technologies, University of Delhi, New Delhi, India.

Guest lectures:

06/2020 Technology decoupling impacts on supply chain management and maintaining continuous engagements in critical technologies, Shanghai Jiao Tong University, Shanghai, China.

12/2019 Industry 4.0: engaging with disruptive technologies, Qufu Normal University, Qufu, China.

12/2019 Innovation management: Machine learning for enterprise value estimation, PingAn Bank, Shenzhen, China.

10/2019 Towards Industry 4.0 and its application use cases, National Institute of Industrial Engineering, Bombay, India.

04/2019 Intelligent conversational interface applications, National Institute of Industrial Engineering, Bombay, India.

10/2018 Identifying gaps in product continuum, Delhi University, New Delhi, India.

05/2018 Analytics for smart future business, National Sun Yat-Sen University, Taiwan, China.

03/2018 Industry 4.0 patent analytics, National Chiao Tung University, Taiwan, China.

12/2017 A digital marketing outline, National Chiao Tung University, Taiwan, China.

08/2016 Lensless camera technology and essential patents, University of Fiji, Fiji.

Guidance:

Summer 2020 Remote Summer Research Internship (Pilot Plan), Sino US Global Logistics Institute, Shanghai Jiao Tong University[Program leadership].

Spring 2019 Taiwan Post Office Big Data competition, National Tsing Hua University[Students qualified in top 20%].

Summer 2019 Summer Internship (Co-advise with Prof. Amy Trappey), National Tsing Hua University.

Winter 2019 University of Auckland Winter Internship (Co-advise with Prof. Amy Trappey), National Tsing Hua University.

Summer 2018 Summer Internship (Co-advise with Prof. Amy Trappey), National Tsing Hua University.

Summer 2017 Summer Internship (Co-advise with Prof. Amy Trappey), National Tsing Hua University.

Review:

2020—Present IEEE Engineering Management Review (SCI).

2020—Present IEEE Access (SCI).

2020—Present Engineering Journal of the Chinese Academy of Engineering (SCIE).

2019—Present IEEE Transactions on Engineering Management (SCI).

2019—Present Business Strategy and The Environment (SSCI).

2019—Present The Journal of Enterprise Information Management (SSCI).

2017—Present World Patent Information (SNIP).

2017—Present IEEE Transactions on Systems, Man, and Cybernetics (SCI).

2016—Present Advanced Engineering Informatics (SCI).

Awards (2014—Present)

1. Intermediate professional technical position certification for assistant researcher, Shanghai Jiao Tong University, 2020.

2. Outstanding conference proceeding paper cash award, National Tsing Hua University, 2019.

3. Certificate of appreciation for internship program management, College of Engineering National Tsing Hua University, 2019.

4. IEEE best research paper award, IEEE International Conference on Advanced Manufacturing (ICAM), 2018.

5. Best paper award finalist, International Symposium on Semiconductor Manufacturing Intelligence (ISMI), 2018.

6. Presidents doctoral scholarship, National Tsing Hua University, 2017 and 2018.

7. Best paper award finalist, Asia Pacific Industrial Engineering & Management Systems Conference (APIEMS), 2016.

8. Shri. Baljit Shastri award for overall excellence in Engineering, Amity University, 2015.

9. Global engineering leadership scholarship, National Tsing Hua University, 2014.