Approved by the Regents
May 19, 2022

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Industrial and Operations Engineering

Xi Yang, assistant professor of industrial and operations engineering, Department of Industrial and Operations Engineering, College of Engineering, and assistant professor of information, School of Information, is recommended for promotion to associate professor of industrial and operations engineering, with tenure, Department of Industrial and Operations Engineering, College of Engineering, and associate professor of information, without tenure, School of Information.

Academic Degrees:

Ph.D.	2014	Nanyang Technological University, Mechanical and Aerospace Engineering (Human Factors), Singapore
M.S.	2009	Nanyang Technological University, Mechanical and Aerospace Engineering (Human Factors), Singapore
B.Eng.	2006	Nanyang Technological University, Electrical and Electronic Engineering, Singapore

Professional Record:

2018 – present	Assistant Professor, School of Information, University of Michigan
2016 – present	Assistant Professor, Department of Industrial and Operations Engineering, University of Michigan
2015 – 2016	Post-doctoral Fellow, Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, MA
2014 – 2015	Post-doctoral Fellow, SUTD-MIT International Design Center, Singapore University of Technology and Design, Singapore

Summary of Evaluation:

Teaching: Professor Yang has had a very good teaching record since joining the IOE department. She has taught two core undergraduate IOE classes (IOE 333 Human Factors and Ergonomics and IOE 465 Design of Experiments), and she developed two new courses (IOE 491 User Experience Design and IOE 491 Human Factors in Health Care). The new IOE 491 classes she created are excellent additions to IOE's undergraduate and master's programs. Outside the classroom, Professor Yang has an excellent track record of mentorship. She has graduated two Ph.D. students, and she is currently advising or co-advising eight Ph.D. students. She has also mentored 13 master's students and eight undergraduate students with diverse backgrounds as part of her teaching and research activities. Several of Professor Yang's students have won highly competitive student awards, which is another indication of her excellence in teaching and mentoring.

Research: Professor Yang's research area is in human-systems-integration, which is one of the strategic focus areas in her department. Her research integrates human factors methods, computational modeling, human subject experiments, and data science to study human-systems-

integration in the context of trust in technology including autonomous vehicles and robots. She consistently publishes her work in very well-respected archival journals in her field, including the very top journals in her field. Professor Yang has published more than 30 refereed journal articles and more than 20 conference proceedings. Her work has been recognized by several awards, including the prestigious NSF Career Award. Professor Yang has demonstrated her ability to independently lead the way on important research studies; she also has an impressive record of collaborative research for a junior faculty member, leading to very productive cross-disciplinary collaborations. She has a robust portfolio of research sponsors, including the National Science Foundation, Army Research Lab, Air Force Office of Scientific Research, Mcity, AAA Foundation for Traffic Safety, and General Motors, demonstrating her ability to attract the necessary resources to support a large research group.

Recent and Significant Publications:

Yang, X. J., Schmanske, C., Searle, C., "Toward quantifying trust dynamics: How people adjust their trust after moment-to-moment interaction with automation," *Human Factors*, 2021, Accepted, in press.

Zhou, F., Yang, X. J., de Winter, J., "Using Eye Tracking Data to Predict Situation Awareness in Takeover Process in Conditionally Automated Driving," *IEEE Transactions on Intelligent Transportation*. 2021, Accepted, in press.

Guo, Y., Shi, C., Yang, X. J., "Reverse Psychology in Trust-Aware Human-Robot Interaction," *IEEE Robotics and Automation Letters*, 2021; 6(3): 4851-4858.

Luo, R., Weng, Y., Wang, Y., Jayakumar, P., Brudnak, M. J., Paul, V., Stein, J. L., Ersal, T., Yang, X. J., "A workload adaptive haptic control scheme for semi-autonomous driving," *Accident Analysis and Prevention*, 2021; 152: 105968.

Du, N., Huang, K., Yang, X. J., "Not all information is equal: Evaluating effects of disclosing likelihood information on trust, dependence and task performance in human-automation teaming," *Human Factors*, 2020; 62(6): 987-1101.

Service: Professor Yang has served on several important department committees, including the Graduate Admissions and Financial Aid Committee and the Graduate and Undergraduate Program Committees. Professor Yang has been actively engaged as a college representative for faculty candidates. Most recently, she has served in some important roles that are relevant to DEI; she was the IOE lead faculty member for the NextProf workshop in fall 2021 and she is leading a new IOE task force aimed at increasing diversity in the graduate applicant pool. In terms of external service, she served as a reviewer for numerous top journals in her field, and she has been engaged in conference organizing activities, such as serving as a session chair and associate editor or program committee member.

External Reviewers:

Reviewer A: "Dr. Yang's scholarship and student mentorship are comparable to others who have achieved tenure in the area of human factors engineering – I have no hesitation in recommending her for promotion and tenure."

Reviewer B: "Dr. Yang's research, teaching, and service activities are outstanding. In my view, Dr. Yang exceeds the requirements for someone being considered for promotion and tenure at my institution. Her research is quite focused and will have strong scholarly impact."

Reviewer C: "Dr. Yang is the true tri-partite mission faculty; she excels in all 3 University Missions. I have reviewed over 40 Engineering P&T packets…and around 20 Medical School [packets]…in the past 10 years. … I would rank Dr. Yang's packet among the highest (at least the top 5%, if not higher)."

Reviewer D: "Jessie has demonstrated a record of transformative research, growing and wide-ranging impact, as well as a record of highly effective teaching and mentoring that sets her apart as a stellar scholar in her field."

Reviewer E: "…Jessie Yang is a very accomplished scholar [of her cohort] in the area of human factors engineering. Her research addresses critical theoretical issues in human-automation interaction and her work has broad, critical implications for socially important problems such as driving safety and workplace efficiency."

Summary of Recommendation: Professor Yang is an outstanding researcher with a strong track record of teaching and service. She is a rising star in the field in industrial engineering. It is with the support of the College of Engineering Executive Committee that I recommend Xi Yang for promotion to associate professor of industrial and operations engineering, with tenure, Department of Industrial and Operations Engineering, College of Engineering, and associate professor of information, without tenure, School of Information.

Alec D. Gallimore, Ph.D.
Robert J. Vlasic Dean of Engineering
College of Engineering

Thomas A. Finholt
Dean, School of Information

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