Approved by the Regents
May 19, 2022

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
SCHOOL OF INFORMATION

Stephen W. Oney, assistant professor of information, School of Information, and assistant professor of electrical engineering and computer science, College of Engineering, is recommended for promotion to associate professor of information, with tenure, School of Information, and associate professor of electrical engineering and computer science, without tenure, College of Engineering.

Academic Degrees:

Ph.D.	2012	Carnegie Mellon University, Human-Computer Interaction, Pittsburgh, PA
M.A.	2007	Massachusetts Institute of Technology, Computer Science, Cambridge, MA

Professional Record:

2017 – present	Assistant Professor of Electrical Engineering and Computer Science, College of Engineering, University of Michigan
2016 – present	Assistant Professor of Information, School of Information, University of Michigan
2015 – 2016	Presidents Post-Doctoral Fellow, School of Information, University of Michigan

Summary of Evaluation:
Teaching: Professor Oney's teaching and mentoring is very strong, and easily meets expectations for tenure. Professor Oney is an exceptional teacher, which was acknowledged in 2021 when Professor Oney received the School of Information (UMSI) Excellence in Instruction award. He has achieved very good teaching reviews despite primarily teaching large introductory courses covering material that is intimidating to many UMSI students. Professor Oney has also contributed significantly to curriculum development. For example, he participated in the development of the Python 3 Programming Specialization on Coursera. Since its launch at the end of 2018, more than 280,000 learners have enrolled in the first course, and more than 50,000 have completed the first course and 20,000 have completed the fourth course.

Professor Oney has been highly active in mentoring students at multiple levels and has successfully worked with students to publish papers in top venues. Most of his papers with student co-authors have a student as the first author. He has advised or co-advised six Ph.D. students and served on four additional committees. Five undergraduate and master's mentees have gone on to pursue PhDs in HCI. One doctoral advisee has graduated and has a good post-doctoral research fellowship position. He has also served as mentor in his academic community co-chairing the IEEE VL/HCC (Visual Languages and Human-Centric Computing) doctoral consortium in 2020.

Professor Oney has primarily taught three courses since starting as an assistant professor in UMSI. He taught SI 506: Programming I, SI 106: Programs, Information and People and SI 579:

Building Interactive Applications. Both SI 106 and SI 506 are introductory required programming courses for UMSI's Bachelor of Science in information (BSI) and Master of Science in information (MSI) students, respectively. His SI 106 and SI 506 offerings generally had 150-200 students per semester; SI 579 had 50 students in its initial offering. Professor Oney's average teaching evaluation score at UMSI was 4.67 (Q1631: This course advanced my understanding of the subject matter) ranging from 4.33 to 5. Analysis of data from several years of offerings shows that the SI 106 course attracted 49.7% women students, with a slightly higher fraction of women than men students going on to enroll in SI 206: Data-Oriented Programming. Both recruitment and retention of women at these rates is highly unusual among intro programming courses nationally and represents an important step towards increasing gender diversity in technical disciplines.

Research: Professor Oney's most significant impact has been to discover how data scientists collaborate, and to use these novel insights to invent and evaluate techniques for supporting collaboration in software development, bridging synchronous and asynchronous interaction together, and maintaining interpretability of references to code in conversation logs, even as the code changes. In doing so, Professor Oney's has designed tools that make programming (particularly interactive programming) easier and that enable more effective collaboration between programmers. His work has led to new design features that match how programmers and for aspiring programmers think and work.

Professor Oney has received significant recognition for his research via best paper awards from rigorously peer-reviewed venues considered top journals and/or conferences in human-computer interaction (HCI) such as: *The ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), (VL/HCC)*, *The ACM Conference on Human Factors in Computing Systems (CHI)*, and *The ACM Symposium on User Interface Software and Technology (UIST)*. Professor Oney has been successful in raising external funding securing over $1.68 million in research funding by April 2021. Extramural funding has come from the National Science Foundation (NSF), and industry funders such as Adobe, Google, and Clinc.

Recent and Significant Publications:

Maulishree Pandey, Vaishnav Kameswaran, Hrishikesh V. Rao, Sile O'Modhrain, Steve Oney. "Understanding Accessibility and Collaboration in Programming for People with Visual Impairments." *Proceedings of the ACM on Human-Computer Interaction*, vol. 5, no. CSCW, Art. 129, April 2021, pp. 1-30. Recognized for Contribution to Diversity and Inclusion

April Yi Wang, Zihan Wu, Christopher Brooks, Steve Oney. "Callisto: Capturing the 'Why' by Connecting Conversations with Computational Narratives." ACM CHI Conference on Human Factors in Computing Systems, April 2020, pp. 1-13. Best Paper Award Honorable Mention

Steve Oney, Rebecca Krosnick, Joel Brandt, Brad Myers. "Implementing multi-touch gestures with touch groups and cross events." ACM CHI Conference on Human Factors in Computing Systems, May 2019, pp. 1-12. Best Paper Award Honorable Mention

April Yi Wang, Anant Mittal, Christopher Brooks, Steve Oney. "How data scientists use computational notebooks for real-time collaboration." *Proceedings of the ACM on*

Human-Computer Interaction, vol.3, no. CSCW, Art. 39, November 2019, pp. 1-30. Best Paper Award

Steve Oney, Christopher Brooks, Paul Resnick. "Creating guided code explanations with chat. codes." *Proceedings of ACM on Human-Computer Interactio*n, vol 2*,* no. CSCW, Art. 131, 2018, pp. 1-20.

Service: Overall, Professor Oney has provided appropriate service to UMSI and the university and significant service to his external research community. Externally, Professor Oney has served on the Program Committees for CHI and UIST for four years each, as well as other relevant conferences such as *ACM International Conference on Supporting Group Work (GROUP)*, *Programming Experience Workshop (PX)*, and *ACM Conference on Tangible, Embedded, and Embodied Interactions (TEI)*. Professor Oney has progressed to leadership roles in the IEEE VL/HCC conference, a respected specialty conference. Internally, Professor Oney's service to the school and university has been driven by his concern for Diversity, Equity, and Inclusion (DEI). For example, he served as a mentor in *Explore CS* (2018-2021) which aims to encourage more women and students from underrepresented groups to participate in CS research. He has also been a panelist in the *Explore Graduate Studies at CSE* which encourages undergraduate students to consider graduate studies. He was a BSI committee member for three years (AY 2018-2020 and 2021-2022) where he championed recruiting more students from community colleges. Professor Oney has served as a faculty advisor to UM's new chapter of Upsilon Pi Epsilon honor society for computing and information students.

External Reviewers:

Reviewer A: "[Professor] Oney easily lies within the set of top researchers in this sub-area and with respect to research, … [Professor] Oney's work is absolutely above the bar for promotion to Associate Professor with tenure at the University of Michigan… Promoting [Professor] Oney should be a no-brainer."

Reviewer B: "I am also very impressed by [Professor Oney's] contribution to CSCW, which is not a conference that often takes a strong interest in work of this kind, but it has been presented in an exemplary manner, and certainly deserved the best paper prize that it received there."

Reviewer C: "Systems HCI is very difficult to do well: projects take a long time, they require overcoming numerous technical hurdles, and it is difficult to find the balance between making a conceptually clean contribution and achieving a high degree of ecological validity. Few researchers do this kind of research consistently well. [Professor] Oney is one of them. It is a delight to read his work."

Reviewer D: "Professor Oney has changed my thinking about the important role of mixing asynchronous and synchronous communications media in helping computer programmers and data scientists, which has inspired me to build upon his ideas in my ongoing work."

Reviewer E: "[Professor] Oney consistently conducts interesting and novel research of the highest quality."

Reviewer F: "My experience of [Professor] Oney's work has thus been one of endless innovation, clever insights, and creative designs, constantly pointing to new ways people might make with code."

Summary of Recommendation:
Professor Oney's accomplishments in the areas of teaching, research, and service meet and exceed promotion and tenure requirements. Therefore, with the support of the Promotion and Tenure Committee of the School of Information and the Executive Committee in the College of Engineering, we enthusiastically recommend Stephen W. Oney for promotion to associate professor of information, with tenure, School of Information, and associate professor of electrical engineering and computer science, without tenure, College of Engineering.

Thomas A. Finholt
Dean, School of Information

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

May 2022