PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Electrical Engineering and Computer Science

Emily K. Mower Provost, associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering, is recommended for promotion to professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

Academic Degrees:
Ph.D.   2010   University of Southern California, Electrical Engineering, Los Angeles, CA
M.S.   2007   University of Southern California, Electrical Engineering, Los Angeles, CA
B.S.   2004   Tufts University, Electrical Engineering, Medford, MA

Professional Record:
2018 – present   Associate Professor (with tenure), Department of Electrical Engineering and Computer Science, University of Michigan
2017 – present   Affiliated Faculty, Department of Robotics, University of Michigan
2016 – present   Affiliated Faculty, MIDAS, University of Michigan
2012 – 2018   Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
2011   Post-doctoral Research Associate, Department of Electrical Engineering and Computer Science, University of Michigan

Summary of Evaluation:
Teaching: Professor Provost's teaching is exemplary. She has recently turned her special-topics course on "Applied Machine Learning for Affective Computing" into a standard course with an assigned number. Across the period since tenure, she consistently receives teaching evaluations that are at or above the mean for the College of Engineering. Her mentoring of graduate and undergraduate students, and her interaction with groups such as gEECS and Girls Who Code, extends the reach and impact of her teaching enormously. She has graduated five Ph.D. students and has another five in progress, with another expected to graduate this year. She proactively engages students. Her mentoring is effective for undergraduate and graduate students alike.

Research: Professor Provost's research focuses on speech processing, measuring human speech patterns in realistic settings and relating these patterns to the speaker's emotional and health state. Two examples of her recent work are particularly noteworthy. First, she has developed a smartphone app in collaboration with the Depression Center at the University of Michigan, through which she has collected over 5,000 hours of speech data. The latest version of the app collects ambient audio, beyond conversational speech data. This provides her a powerful tool in advancing her research, and a valuable resource for the field. Second, she is now building on her prior work on speech processing to apply her algorithms and representations in new areas to advance healthcare. Her paper on identifying suicidal ideation from speech data, published since

her last promotion, was mentioned by reviewers as a significant result. She is a recognized international leader in her field. She has more than $1.8M in current funding, much of it from the NSF.

Professor Provost has published 16 journal papers (five since her last promotion review) and 65 peer-reviewed conference papers (20 since her last promotion review), with over 6300 citations and an h-index of 32 (per Google Scholar). She has two patents awarded (one since promotion), four provisional or pending patents (three since promotion), and three invention disclosures.

Recent and Significant Publications:
M. Jaiswal, E. Mower Provost, "Privacy Enhanced Multimodal Neural Representations for Emotion Recognition," *AAAI,* 2020.
Z. Aldeneh, M. Perez, E. Mower Provost, "Learning Paralinguistic Features from Audiobooks through Style Voice Conversions," Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), 2021.
K. Matton, M. McInnis, E. Mower Provost, "Into the Wild: Transitioning from Recognizing Mood in Clinical Interactions to Personal Conversations for Individuals with Bipolar Disorder," Interspeech, 2019.
B. Zhang, Y. Kong, G. Essl, E. Mower Provost, "f-Similarity Preservation Loss for Soft Labels: A Demonstration on Cross-Corpus Speech Emotion Recognition," *AAAI*, 2019.
J. Gideon, H. Schatten, M. McInnis, E. Mower Provost, "Emotion Recognition from Natural Phone Conversations in Individuals With and Without Recent Suicidal Ideation," Interspeech, 2019.

Service: Professor Provost has a strong record of service. She has played a critical role in listening to and supporting graduate students in CSE, as described by letters from students and faculty. She became the graduate committee chair and was appointed the first associate chair of graduate studies in CSE. She has been innovative in proposing updates to the division's policies (e.g., to promote mentoring plans to improve communication and transparency with graduate students), and most impressively, she has been successful at getting faculty consensus for these reforms. She has served on numerous panels and given talks in outreach to women and girls at many levels. She has engaged with Girls Who Code and CS-Kickstart. She serves on the Rackham RMF Evaluation committee and has developed LGBTQ+ supportive activities as part of her role as the chair of the Ph.D. program. She also brings a DEI focus into the classroom, as attested to by her casebook and the student letters, talking about ethical implications of AI in her courses, highlighting potential for bias in machine learning, and developing non-gendered and culturally-neutral lecture and homework examples. In recognition of her service contributions, as well as excellence in teaching and research, Professor Provost received a 2022 EECS Outstanding Achievement Award.

Externally, Professor Provost has made significant contributions to professional communities focused on AI in speech and in mental health. These include serving as associate editor for four of the top-ranked journals in the field, serving as the program chair for a number of key conferences, being elected to prestigious technical committees, being chosen to run an NSF workshop on Young Female Researchers in Speech Science and Technology, and co-organizer of workshops and panels for Interspeech about and for women in the field.

External Reviewers:

Reviewer A: "Prof. Provost has grown an established research group that has a strong international research reputation, and successfully graduated five PhD students and four MS students as primary advis[o]r. I have reviewed papers by her PhD students and invited them to review papers for international journals, and can attest to the very high quality of their research output."

Reviewer B: "…I believe that Emily Mower Provost has demonstrated <u>all the necessary qualities, commitment, and accomplishments a department would want for in a faculty member</u> … She is a dynamic, energetic, and creative researcher, educator, and mentor who will continue to make substantial contributions to the field that will also benefit society as a whole. She is well deserving of this promotion."

Reviewer C: "Dr. Provost...has also done research on the identification of physical disorders. This research as well as work on mental disorders fall squarely in the category of 'AI for Social Good' as well as being both challenging and scientifically interesting. I very strongly support her promotion at the University of Michigan. She is an excellent candidate."

Reviewer D: "Professor Provost, in my opinion, is among the top researchers in her peer group working in the same field."

Reviewer E: "My technical interactions with Emily...convince me that she is exceptionally qualified as researcher and educator with excellent qualities for academic pursuits, as well as a person who effectively works toward translating her research to the clinical world, consequently emerging as a top leader in her field of emotion recognition."

Summary of Recommendation: Professor Provost has established a high-impact record of teaching, scholarly research, and service at the University of Michigan. It is with the support of the College of Engineering Executive Committee that I recommend Emily K. Mower Provost for promotion to professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

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

May 2023