Approved by the Regents
May 18, 2023

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Engineering and Computer Science

Mohamed Abouelenien, assistant professor of computer and information science, Department of Computer and Information Science, College of Engineering and Computer Science, is recommended for promotion to associate professor of computer and information science, with tenure, Department of Computer and Information Science, College of Engineering and Computer Science.

Academic Degrees:

Ph.D.	2013	Computer Science and Engineering, University of North Texas, Denton, TX
M.S.	2008	Electronics and Communication Engineering, Arab Academy for Science and Technology, Cairo, Egypt
B.S.	2005	Electronics and Communication Engineering, Arab Academy for Science and Technology, Cairo, Egypt

Professional Record:

2017-present	Assistant Professor, Computer and Information Science, University of Michigan-Dearborn
2014-2017	Post-doctoral Research Fellow, Electrical Engineering and Computer Science, University of Michigan-Ann Arbor

Summary of Evaluation:

Teaching: Professor Abouelenien is an excellent and effective instructor. He has taught five different courses at both undergraduate and graduate levels and developed three new courses. His courses are popular with the students, in part because of timely topics such as big data or natural language processing. His teaching evaluations by students have placed him in the top tier of the department.

Professor Abouelenien also has an excellent student supervision record including post-doctoral fellows (two), doctoral students (three), master's students (10), and undergraduates (two). He has also served on committees for five additional doctoral students.

Research: Professor Abouelenien has made excellent research contributions to the areas of affective computing and multimodal interaction. Some of his research programs underway include circadian state detection, non-contact extraction of physiological signal, detection of drivers' drowsiness and distraction, multimodal deception detection, and multimodal detection of thermal discomfort. Professor Abouelenien has received seven research grants, as principal and co-principal investigator, totaling more than $1.3 million since joining UM-Dearborn. He has published more than 25 peer-reviewed papers in this same span.

Recent and Significant Publications:

U. M. Sen, V. Perez-Rosas, B. Yanikoglu, M. Abouelenien, M. Burzo and R. Mihalcea, "Multimodal Deception Detection using Real-Life Trial Data" in *IEEE Transactions on Affective Computing*, vol. 13, no. 1, pp. 306-319, 2022.

M. Papakostas, K. Das, M. Abouelenien, R. Mihalcea, M. Burzo, "Distracted and Drowsy Driving Modeling Using Deep Physiological Representations and Multitask Learning" in *Applied Sciences*, 11(1):88, 2021.

M. Abouelenien and M. Burzo, "Detecting Thermal Discomfort of Drivers Using Physiological Sensors and Thermal Imaging," in *IEEE Intelligent Systems*, vol. 34, no. 5, pp. 3-13, 2019.

X. Yuan, L. Xie, and M. Abouelenien "A Regularized Ensemble Framework of Deep Learning for Cancer Detection from Multi-class, Imbalanced Training Data," *Pattern Recognition*, 77:160–172, 2018.

Service: Professor Abouelenien has made important service contributions to both the university community and the professional community. At UM-Dearborn, he served on committees related to assessment, a new master's program, research, the College of Engineering and Computer Science (CECS) driving simulator, student organizations, and faculty search. He also served on the Michigan Robotics Day Organizing Committee, which helped raise the profile of CECS. In the professional community, he served on the program committees for several conferences/workshops and gave invited talks at several venues.

External Reviewers:

Reviewer A: "I am enthusiastic in recommending Dr. Abouelenien for tenure and promotion in your department. The record and impact of his work and publications show that he will be an asset to your institution."

Reviewer B: "Overall, the quality of his publications is in line with expectation relative to his peer group."

Reviewer C: "Dr. Abouelenien's work goes beyond deception, especially more recently, with work on driver drowsiness detection and stress detection. I particularly liked the work on multimodal gender detection presented at ICMI 2017. This is particularly relevant given all the recent work on gender biases found in many Artificial Intelligence (AI) algorithms. Dr. Abouelenien's work is bringing good insight for the affective computing community."

Reviewer D: "…[Professor Abouelenien] exceeds expectations in research. He wins competitive research grants, which he puts them into good use, by training PhD students with good publication records. Importantly, he pursues increasingly impactful research in affective computing, where he has established himself as a highly promising…scholar. For these reasons, Dr. Mohamed Abouelenien unquestionably deserves to be promoted and awarded tenure.

Reviewer E: "A review of Dr. Abouelenien's…[work shows] a consistent methodology of how he and his co-researchers approach a given problem. It is to collect the pertinent data using different modalities, identify the important features of the data, integrate them via suitable machine learning models, and perform evaluation and analyze [sic] the results. The importance

of these papers lies in their potential applications towards safer driving and driver comfort; applications that are in sync with the local industry needs…. His most recent paper on multimodal deception detection appears novel and is likely to find applications in the advertising industry to gauge viewers' reaction to advertisements."

Reviewer F: "…I believe Dr. Abouelenien is working on a unique research direction with a great promise that complements most existing research efforts in AI and machine learning. An important part of his research to develop statistical models for human behavior understanding involves collecting data from multiple modalities using various sensing devices. While vision and language have been the dominant data sources used by major AI disciplines, including computer vision and natural language processing, other data modalities have started to play an increasingly important role, especially when humans are involved in the learning loop to understand their behavior and support critical decision-making. Dr. Abouelenien's work fills out this critical gap by including some non-traditional data modalities collected using physiological sensors, thermal imaging, and other sensing devices."

Summary of Recommendation: Professor Abouelenien is an excellent faculty member who has made impressive contributions to research, teaching, and service. It is with the support of the College of Engineering and Computer Science Executive Committee that I recommend Mohamed Abouelenien for promotion to associate professor of computer and information science, with tenure, Department of Computer and Information Science, College of Engineering and Computer Science.

Ghassan Kridli, Dean
College of Engineering and Computer Science

Domenico Grasso, Chancellor
University of Michigan-Dearborn

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