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

Hafiz Malik, assistant professor of electrical and computer engineering, College of Engineering and Computer Science, is recommended for promotion to associate professor of electrical and computer engineering, with tenure, Department of Electrical and Computer Engineering, College of Engineering and Computer Science.

Academic Degrees:

Ph.D.   2006   University of Illinois at Chicago, Chicago, IL
B.S.   1999   University of Engineering and Technology Lahore, Pakistan

Professional Record:

2007 – present   Assistant Professor of Electrical and Computer Engineering, Department of Electrical and Computer Engineering, University of Michigan-Dearborn
2006 – 2007   Post-Doctoral Research Associate, Stevens Institute of Technology, Hoboken, NJ
2005 – 2006   Graduate Research Associate, University of Illinois at Chicago, Chicago, IL

Teaching: Professor Malik is rated excellent in teaching. During the last six years, Dr. Malik has taught six different courses, four undergraduate courses and two graduate courses: ECE 375, ECE 387, ECE 450, ECE 414, ECE 537/CIS 568, ECE 550, namely one new course per year. He received very strong teaching evaluations from students: 3.41/4.0 on average over all 21 courses he taught at UM-Dearborn. In addition, Professor Malik proposed and developed a new course: ECE 387 Digital Forensics I, and the lab session for the computer engineering curriculum.

Professor Malik has been actively involved in supervising graduate and undergraduate students, including chairing M.S. thesis committees, member of Ph.D. dissertation and M.S. thesis/project committees, advising senior design groups, supervising independent studies, and mentoring/advising visiting scholars. He served on four Ph.D. thesis committees, served as an adviser on five Master's theses, two graduate directed studies, and six undergraduate directed studies, and supervised 10 senior design projects. Professor Malik is very actively involved in department lab development and academic accreditation process. He established the Digital Forensics Lab, which is now used by students in two departments: ECE and CIS.

Research: Professor Malik is rated significantly capable in his research. Professor Malik's research interest is in the areas of multimedia forensics and security, multimodal and multi-sensor information fusion, and active-surveillance systems. Since joining the ECE department, Professor Malik has had five journal papers published or accepted for publication, 21 refereed conference papers and four book chapters. All five journal papers were published in the top journals in his field, three in *IEEE Transactions on Information Forensics and Security*, one in *IEE Proceedings (IET) Information Security* and one in *International Journal on Informatics*. Faculty in the ECE department noted that Professor Malik's scholarly work is of high quality and

is very well respected in the scientific community as evidenced in the external reviewers' evaluations.

As for research funding, Professor Malik obtained, as the PI or co-PI, a total of eight external and internal research projects (about $226,000) during the last six years. As the PI, Professor Malik received two externally-sponsored research grants, which is about $154,000 in total. One of the funding sources is National Academies, which is an extremely competitive funding agency. In addition, Professor Malik is expecting two external research grants to come shortly, with funding of about $100,000 in total.

Recent and Significant Publications:

Malik, H., "Acoustic Environment Identification and Its Applications to Audio Forensics," *IEEE Transactions on Information Forensics and Security* to appear in 2013.

Zhao, H., and Malik, H., "Audio Recording Location Identification using Acoustic Environment Signature," *IEEE Transactions on Information Forensics and Security*, vol. 8(11), pp. 1746 – 1759, November 2013.

Malik, H., Subbalakshmi, K. P., and Chandramouli, R., "Nonparametric Steganalysis of Quantization Index Modulation Based Data Hiding Using Approximate Entropy," *IEEE Transactions on Information Forensics and Security*, vol. 7(2), pp. 418 – 431, April 2012.

Malik, H., "Blind Watermark Estimation Attack for Spread Spectrum Watermarking," *International Journal on Informatica: Special Issue on Multimedia Information System Security*, vol. 33, March 2009, pp. 49 – 68.

Malik, H., Khokhar, A., and Ansari, R., "Robust Audio Watermarking using Frequency Selective Spread Spectrum," IEE (*IET*) *Information Security*, vol. 2(4), Dec. 2008, pp. 129 – 150.

Malik, H., Khokhar, A., and Ansari, R., "Robust Data Hiding in Audio using Allpass Filter," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 15 (4), May 2007, pp. 1296-1304.

Service: Professor Malik is rated excellent in his service. Professor Malik served on four ECE department committees including faculty search committee, digital forensics Curriculum Committee, M.S. in Multimedia Engineering Committee, and ECE Curriculum Committee, one CECS committee, and one campus committee. He was actively involved in UM-Dearborn open house to present demonstrations of his research and student projects, and in outreach projects with high school students. He is very collegial and is highly regarded by both colleagues and students.

Professor Malik's professional service is equally excellent. He served as an associate editor of a Springer journal, a member of technical committees on 27 conferences, and a reviewer for 21 journals. It is noted that Professor Malik is also actively involved in high school student activities. He supervised a group of four local high school students for the U.S. Army's 10th eCybermission Competition, 2011-2012, who won the first prize.

External Reviewers:
Reviewer A: "...After getting his Ph.D. degree Dr. Malik focused on multimedia forensics, information hiding and steganalysis. These are hot research areas with practical implications. As a result his work receives more attention every year. According to Google Scholar, there is a

linear increasing trend in the number of citations he receives. ... I strongly support the promotion of Dr. Hafiz Malik to the position of Associate Professor."

Reviewer B: "In summary, Dr. Malik has made and will continue to make significant contributions in his research fields. In addition, Dr. Malik is well-focused and dedicated in his fields of expertise, and he understands the nature of professional respect and protocol. Therefore, I strongly support his promotion case without any reservation."
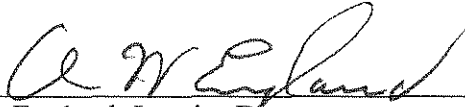
Reviewer C: "...Two of his journal papers seem to have been cited about 16 times, while a third one about 10 times. This indicates that his papers have been well received and valued by the research community. ...In view of above, I would rate Dr. Malik's scholarly accomplishments as more than satisfactory and his professional service as excellent. Also, comparing his accomplishment in the above areas with those of some of my colleagues at similar levels in their career, I would say that he deserves to be promoted to Associate professor with tenure."

Reviewer D: "...His very good publication record in highly respected journals (e.g., the IEEE Trans. on information forensics and security or the IEEE Trans. on audio, speech and language processing), and in major conferences of the field is further evidence of the excellent level of his work. His publications reflect depth and persistence in his scientific investigations. His work is clever, theoretically well-grounded, and has important implications to both researchers and practitioners. ...In light of the very good achievements so far, I have no doubt that Dr. Malik's work will continue to serve as a milestone and foundation for researchers and engineers in the area of multimedia security and forensics and will decidedly contribute to progress in scientific research and development."

Reviewer E: "...Dr. Malik has as strong publication record, ... His journal papers include one published and two recently accepted papers in/to the IEEE Transactions on Information Forensics and Security, which is one of the best journals in his research areas. ...I consider these three papers as his most outstanding publications. In two of these papers, he developed efficient approaches for acoustic environment identification. In the third, he developed an active steganalysis technique for quantization index modulation based on steganography. As with most his research papers that I read, these papers are well written and motivated and address important, timely, and challenging research problems. Moreover, the proposed approaches are novel, practical and shown to be efficient. ...Based on his publication record, scholarly contributions, and professional service and in comparison with peers in similar areas, I strongly recommend Dr. Hafiz Malik for the tenure and promotion to Associate Professor in the ECE department in the UMD."

Reviewer F: "...Dr. Hafiz Malik is a well-known academic and an active researcher of international standing. His research areas include current and much in-demand subjects in digital forensics, wireless sensor network security, multimedia and biometric security, adaptive filtering, blind source separation, pattern recognition, and machine learning. ...I have no doubt that Hafiz will continue to be very valuable to your leadership team at the department and a great asset to the university. I strongly recommend Hafiz to you for promotion to Associate Professor."

<u>Summary of Recommendation</u>: Professor Malik is an excellent teacher, who is highly regarded by students and faculty. He is significantly capable in research publications and obtaining research funding. Professor Malik is an excellent teacher and has been providing excellent service to the ECE department and the research community. We are very pleased to recommend, with strong support of the College of Engineering and Executive Committee, Hafiz Malik for promotion to associate professor of electrical and computer engineering, with tenure, Department of Electrical and Computer Engineering, College of Engineering and Computer Science.

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Anthony England, Interim Dean   Daniel Little, Chancellor
College of Engineering and Computer Science   University of Michigan-Dearborn

May 2014