

May 14, 2009

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Engineering and Computer Science
Department of Industrial and Manufacturing Systems Engineering

Armen Zakarian, associate professor of industrial and manufacturing systems engineering, with tenure, Department of Industrial and Manufacturing Systems Engineering, College of Engineering and Computer Science, is recommended for promotion to professor of industrial and manufacturing systems engineering, with tenure, Department of Industrial and Manufacturing Systems Engineering, College of Engineering and Computer Science.

Academic Degrees:

Ph.D. 1997	Industrial Engineering, University of Iowa
M. S. 1993	Industrial and Systems Engineering, University of Southern California
B. S. 1990	Mechanical Engineering, Yervan Polytechnic University, Armenia

Professional Record:

2003 - present	Associate Professor, University of Michigan-Dearborn
2001 - present	Director, Engineering Computing and Information Services, University of Michigan Dearborn
2003 - 2008	Summer Intern Professor, Advanced Manufacturing Engineering, Chrysler Corporation, Auburn Hills, MI
1997 - 2003	Assistant Professor, University of Michigan-Dearborn
Summer 1999	Systems Analyst, Operations Research Group, General Motors Corporation, Pontiac, Michigan

Summary of Evaluation:

Teaching: Professor Zakarian's teaching is rated excellent. Professor Zakarian is an effective teacher who inspires students with excitement and enjoyment for the subject area. He continuously updates the teaching material by creatively incorporating new developments in the field and creates a sense of relevance between complex theory covered in class and the world of practice by including current examples and relevant applications. He delivers well-prepared lectures/presentations and is readily available to help the students and motivate them to do their best. Professor Zakarian has consistently received excellent student evaluations. He has developed a web based software program called Virtual Learning Tool (VLT) to support instruction at UM-Dearborn. This tool is designed to help instructors create a classroom presence on the web. Professor Zakarian has also supervised eleven students for their Master's thesis. During 2006-2007, his composite student evaluation rating was 3.78 (out of 4.0), and he was ranked second among thirteen faculty members in the department. During 2007-2008, this rating was 3.66, and he was ranked third among fourteen faculty members.

Research: Professor Zakarian's research is rated excellent. His interests include intelligent design and manufacturing, modeling and analysis of manufacturing systems, system/product engineering and architecting, and the development of integrated products and systems. Since his promotion to associate professor, he has published 10 papers in top to medium tier refereed

journals and three papers in refereed conference proceedings. Professor Zakarian has received funding in excess of \$4M for sponsored research as co-principal investigator from external sources such as Department of Navy and the US Army since 2003. He also secured about \$300,000 in internal research funding.

Recent and Significant Publications:

- Zakarian, A., "A New Non-Binary Matrix Clustering Algorithm for Development of System Architectures," *IEEE Transactions on Systems, Man and Cybernetics-Part C*, vol. 38, no. 1, 2008, pp. 135-141.
- Siradeghyan, Y., Zakarian, A. and Mohanty, P., "Entropy Based Associative Classification Algorithm for Mining Manufacturing Data," *Int. J. of Computer Integrated Manufacturing*, vol. 21, no. 7, 2008, pages 825 – 838.
- Zakarian, A., "Methodology for the Performance Analysis of Product Validation and Test Plans," *Int. J. of Product Development*, (accepted 10/08).
- Buddhakulsomsiri, J. and Zakarian, A., "Sequential Pattern Mining Algorithm for Automotive Warranty Data," *Computers and Industrial Engineering*, (accepted 10/08).
- Yenokyan, L., Zakarian, A., Mohanty, P. and Avagyan, V., "Symmetric Reconstruction Algorithms for Incomplete 3D Models," *Int. J. of Computer Applications in Technology*, (accepted 7/08).
- Avagyan, V., Zakarian, A. and Mohanty, P., "Scanned 3D Model Matching and Comparison Algorithms for Manufacturing and Design Applications," *Transactions of the ASME: Journal of Manufacturing Science and Engineering*, vol. 129, no. 1, 2007, pp. 190-201.
- Zakarian, A., Knight, J. W. and Baghdasaryan, L. A., "Modeling and Analysis of System Robustness," *Journal of Engineering Design*, vol. 18, no. 3, 2007, pp. 243-263.

Service: Professor Zakarian's service is rated excellent. He has served commendably on various campus committees, including Promotion and Tenure Committee, Faculty Senate, Faculty Senate Council, Research Support Committee, Budget Committee, Tech Use Task Force, Information Technology Advisory Committee, IT Goals and Standards Committee, Flu Pandemic Planning Committee, and Course Management System Taskforce. At the college level, he has served on the CECS Executive Committee, Research Taskforce for Improving CECS's Research Activities in Preparation of Ph.D. Programs, CECS Computing Committee and various search committees. In the department, Professor Zakarian serves on the Graduate Committee for the Engineering Management Program. He also took a lead role in the development of the new graduate program in project and program management. He has also served as reviewer, session chair, and track coordinator for various conferences sponsored by professional organizations.

External Reviewers:

Reviewer A: "Dr. Zakarian has a focus research area as demonstrated by his journal publications. I was not surprised to find out that he has received an INCOSE best paper award in 2003. I was able to reconfirm my opinion on his research capabilities while I was reviewing his promotion documents.....Dr. Zakarian's research is sound as demonstrated by his publications in the International Journal of Production Research, IEEE Transactions on Systems, Man and

Cybernetics..... His research funding is excellent as demonstrated by his recent grants... I am confident that he will continue to grow professionally as a researcher. I am also confident that he will continue to make significant developments as a researcher and teacher. He will definitely greatly strengthen your department in the years to come.”

Reviewer B: “I am impressed about the quality, quantity, focus and scholarly impact of his writings. Given nine articles in top level journals among eighteen refereed journal articles, they are both impressive in quality and quantity. In addition his funded research activities were also very impressive, not only in the total amount but also in the variety of funding agencies as well as his consistence in working on them.... I would at least put him in the top seventy five percentile of our community in research/scholarship. His contributions have placed him in the Big Ten school level of professorship....In summary, I am glad you have such a great asset in your department and strongly recommend you grant him promotion to professor that he has earned and deserves.”

Reviewer C: “It appears that he has been successful as both a leader and a collaborator in research....I am impressed with wide variety of areas in which Dr. Zakarian has published. He has chosen important subjects and has published his findings in the appropriate journals. I find each of them to be high potential value and application..... When I look at the entire package for Dr. Zakarian, I find it to be on a par with a number of such packages that I have reviewed for promotion at this level.”

Reviewer D: “Dr. Zakarian has contributed significantly to the field of process modeling, and to some extent in the field of modular architectures in the automotive domain.”

Reviewer E: “In general speaking, I feel OK for Dr. Zakarian to be promoted to be a full professor with his current scholarly achievements..... His research funding is good enough with an excellent project funded by the US Army...As a conclusion; I trustfully believe that Dr. Zakarian has reached a decent standard for promotion to a full Professor.”

Summary of Recommendation:

Professor Zakarian is a rare combination of an excellent teacher as well as an excellent researcher. He is expected to continue to be one of the most dedicated and productive faculty members in the department. We are pleased to recommend, with support of the College of Engineering and Computer Science Executive Committee, Armen Zakarian for promotion to professor of industrial and manufacturing systems engineering, with tenure, Department of Industrial and Manufacturing Systems Engineering, College of Engineering and Computer Science.



Subrata Sengupta
Dean
College of Engineering and Computer Science



Daniel Little
Chancellor
University of Michigan-Dearborn

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