

PROMOTION RECOMMENDATION  
The University of Michigan-Flint  
College of Arts and Sciences  
Department of Computer Science, Engineering, and Physics

Murali Mani, associate professor of computer science, with tenure, Department of Computer Science, Engineering, and Physics, College of Arts and Sciences, is recommended for promotion to professor of computer science, with tenure, Department of Computer Science, Engineering, and Physics, College of Arts and Sciences.

Academic Degrees:

Ph.D.	2003	University of California-Los Angeles, Computer Science, Los Angeles, CA
M.S.	2000	University of California-Los Angeles, Computer Science, Los Angeles, CA
B.Tech.	1998	Indian Institute of Technology-Madras, Computer Science and Engineering, Madras, India

Professional Record:

2014-Present	Associate Professor of Computer Science, University of Michigan-Flint, Flint, MI
2010-2014	Assistant Professor of Computer Science, University of Michigan-Flint, Flint, MI
2003-2009	Assistant Professor of Computer Science, Worcester Polytechnic Institute, Worcester, MA

Summary of Evaluation:

Teaching: Since his arrival at the University of Michigan-Flint in the winter of 2010, Professor Mani has taught fourteen different classes ranging from introductory courses such as CSC 122 “Introduction to Programming” and CSC 175 “Problem Solving and Programming I,” to upper level courses in “Advanced Web Application Programming” (CSC 363) and “Database Design” (CSC 384). Additionally, Professor Mani has taught three graduate courses while at the University of Michigan-Flint – CSC 530 “Advanced Information Storage and Retrieval,” CIS 531 “Data Warehousing and Business Intelligence,” and CSC 582 “Advanced Database Concepts and Applications.” Professor Mani’s dedication to student learning is also underscored by the fact that since his promotion in the fall of 2014, he has develop or substantially modified eight classes – again at all levels from introductory through graduate level courses. Regarding his course evaluations, the averages for the questions “Overall, this was an excellent course,” “Overall, the instructor was an excellent teacher,” and “I learned a great deal in this course,” were 4.55, 4.72, and 4.62, respectively. As noted by his peer reviews, Professor Mani has demonstrated that he is an effective instructor whose “easy-going presentation style” fosters a comfortable learning environment. This, coupled with his utilization of multiple modes of learning, generates high levels of student interaction and engagement. Professor Mani’s syllabi are detailed and thoughtful and a review of his course materials over time demonstrates his ability to change teaching styles to better fit students’ needs. Professor Mani assesses student learning at multiple levels, be it for General Education courses or for program review within Computer Science. He works collaboratively with the professional advisor for the Computer Science program to support students and serves as the advisor for the CSC/CIS Honors program. He has supervised two Masters’ theses, as well as advised over two dozen graduate students and a half dozen undergraduate students on their research.

Research: Professor Mani is a computer scientist specializing in databases, data-intensive systems, and big data. More specifically, Professor Mani is engaged in four areas of research. The first is Data Provenance, or the description of the steps by which data are obtained and the subsequent analysis of such derivation histories. The second area of research that Professor Mani is pursuing is in the area of Big Data which addresses the challenges of integrating disparate or unaligned data from two or more datasets. His third area of scholarly activity is in secure cloud computing and takes on the challenge of performing algebraic

query processing on encrypted data. The final area of Professor Mani's research investigates the effectiveness of student response systems and flipped classroom assignments on students' awareness of their learning. These scholarly pursuits have resulted in six peer reviewed conference presentations and one system demonstration since his promotion to associate professor. One of his papers was the runner-up for the best paper award in 2018.

Recent and Significant Scholarly Activity:

Jie Song, Danai Koutra, Murali Mani, H. V. Jagadish, GeoAlign: Interpolating Aggregates over Unaligned Partitions, EDBT 2018, Vienna, Austria, Mar 2018

Jie Song, Danai Koutra, Murali Mani, H. V. Jagadish, GeoFlux: Hands-Off Data Integration Leveraging Join Key Knowledge. In Proceedings of the 2018 ACM International Conference on Management of Data, SIGMOD Conference 2018, (System Demonstration), Houston, TX, Jun 2018

Halil Bisgin, Murali Mani Suleyman Uludag, Delineating Factors that Influence Student Performance in a Data Structures Course, *IEEE Frontiers in Education Conference (FIE)*, San Jose, CA, Oct 2018

Service: Since his promotion to associate professor, Professor Mani has continued to provide service and leadership to his department, college, university, and professional and local communities. For his department and program, the most significant leadership position Professor Mani held was his one-year term as the associate chair of the computer science program. He has also served his department and program by being a member of multiple tenure, two year and four year review committees, as well as the department's scholarship committee. Professor Mani has also provided leadership and service to the College of Arts and Sciences through his three-year term on the college's Executive Committee, his co-chairing of the Student Success Implementation Committee, and his three-year term on the Academic Standards Committee in which he served as the secretary for the 2018-2019 academic year. Since 2014, Professor Mani has also served on the university's Scholarships, Awards and Special Events Committee, the Graduate Board, and is the treasurer and grievance officer for the Flint Chapter of the American Association of University Professors. For his professional community, Professor Mani has served as a panel member for the National Science Foundation which reviews research proposals and scholarship applications. Professor Mani has also served as a peer reviewer through his membership on various program committees for conferences such as VLDB (Very Large Data Bases), WISE (Web Information Systems Engineering), and the following two IEEE conferences, ICBK (International Conference on Big Knowledge) and MLDS (Machine Learning and Data Science). He has served his profession by being a peer reviewer for numerous scholarly publications such as *FIE (Frontiers in Education)*, the ACM's (Association for Computing Machinery) journals, *Transactions on Database Systems* and *Transactions on Internet of Things*, as well as the following IEEE (Institute of Electrical and Electronics Engineers) journals, *Transactions on Knowledge and Data Engineering*, *Transactions on Computational Social Systems*, and *Transactions on Services Computing*.

External Reviewers:

Reviewer (A): "...three of the papers, *Effective Big Data Visualization*, *An Integrated Load Reduction Framework for XML stream Processing*, and *Interpolating Aggregates over Unaligned Partitions* are quality papers."

Reviewer (B): "He has collaborated on some of the above topics [provenance management and big data management] with colleagues at WPI and UM Ann Arbor obtaining results that have been published in a A-ranked and a A\*-ranked conference."

Reviewer (C): "Over the last six years, Murali has published in CIDR, ICDE, SIGMOD, EDBT, and FIE (twice). This has been across an impressively broad set of themes in database management, and shows his ability to innovate and to choose good problems... Murali's research contributions are creative and noteworthy."

Reviewer (D): “Since being promoted to Associate Professor, he has continued his research in collaboration with others and have published some quality publications like EDBT and SIGMOD papers. His work is in the area of big data for dataset discovery and aggregated interpolation, visualization and workflow provenance. These areas are very important in several applications of big data and analytics.”

Reviewer (E): “I noticed that Dr. Mani has been active in performing research in various cutting-edge research areas including Data Provenance, Big Data, and Cloud Computing Security...he has been publishing papers in conference proceedings, many of which are competitive ones.”


Reviewer (F): “He has publication that were accepted in excellent venues such as EDBT and SIGMOD conferences... This publication record makes Dr. Mani to be a very successful scholar.”

Reviewer (G): “Prof. Mani has a solid publication record, with a number of highly innovative papers... I am also delighted to learn that a full research paper related to *GeoFlux*, titled ‘GeoAlign: Incorporating Aggregates over Unaligned Partitions,’ was published at EDBT 2018, another top venue for database research, and was selected as a Best Paper Runner-up. This is a great honor that only selected few in our research community have received.”

Summary of Recommendation:

Professor Mani is a computer scientist specializing in databases, data-intensive systems, and big data. Since his promotion to associate professor, Professor Mani has published six peer reviewed conference presentations and has been selected for one system demonstration. His pedagogy that utilizes multiple modes of learning coupled with his “easy-going presentation style” fosters a comfortable learning environment that result in high levels of student interaction and engagement. Professor Mani has provided service and leadership to his program, department and college through his terms as the associate chair for the computer science program and his three-year terms as a member of the college’s Executive Committee and Academic Standards Committee. He has also provided extensive service to his professional community through is service as a peer reviewer for numerous conferences and journals. Professor Mani has demonstrated the requisite excellence in teaching, scholarly achievement and recognition, and service and leadership to department, college, university. I recommend Murali Mani for promotion to professor of computer science, with tenure, Department of Computer Science, Engineering, and Physics, College of Arts and Sciences.

Recommended by:



Susan Gano-Phillips, Dean  
College of Arts and Sciences

Recommendation endorsed by:



Keith Moreland, Interim Provost and  
Vice Chancellor for Academic Affairs



Debasish Dutta, Chancellor  
University of Michigan-Flint

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