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

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

Academic Degrees:
Ph.D.   2014   University of Texas at Austin, Computer Science, Austin, TX
M.S.   2007   University of Patras, Computer Science, Patras, Greece
B.S.   2005   University of Patras, Computer Science, Patras, Greece

Professional Record:
2017 – present   Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
2014 – 2016   Post-Doctoral Researcher, Microsoft Research, Microsoft Corporation, Redmond, WA

Summary of Evaluation:
Teaching: Professor Kapritsos has taught a very large undergraduate course (EECS 482) as well as a core graduate course (EECS 591). His teaching ratings in these courses have ranged from very good to exceptional. Students refer to him as being open and having a welcoming approach, along with an ability to offer guidance without proscribing an approach or minimizing a student's efforts. His efforts have already been recognized with a College of Engineering Jon R. and Beverly S. Holt Award for Excellence in Teaching (2022). He has graduated one Ph.D. student and has another five in progress. He has been active in advising masters and undergraduate students as well. His CV lists five papers with a graduate student as first author, with two of those in prestigious venues.

Research: Professor Kapritsos' research is centered on building and verifying reliable distributed systems. He has several publications in the most prestigious venues in the field, and the work is widely recognized as impactful. Among his most significant contributions is a system called I4, described in a paper published at the Symposium on Operating Systems Principles (SOSP) in 2019. Professor Katritsos has been successful in supporting his group, having raised $2.8M in funding from various sources including the NSF, DoD, and industry. This funding includes a prestigious NSF CAREER Award in 2021.

Recent and Significant Publications:
R. C. Aksoy, M. Kapritsos, "Aegean: Replication Beyond the Client-server Model," *Proceedings of the 27th ACM Symposium on Operating Systems Principles* (SOSP '19), Huntsville, ON, Canada, October 2019.

J. Lorch, Y. Chen, M. Kapritsos, B. Parno, S. Qadeer, U. Sharma, J. Wilcox, X. Zhao, "Armada: Low-effort Verification of High-performance Concurrent Programs," *ACM SIGPLAN Conference on Programming Language Design and Implementation 2020*, London, England, June 2020.

H. Ma, A. Goel, J. B. Jeannin, M. Kapritsos, B. Kasikci, K. A. Sakallah, "I4: Incremental Inference of Inductive Invariants for Verification of Distributed Protocols," *Proceedings of the 27th ACM Symposium on Operating Systems Principles* (SOSP '19), Huntsville, ON, Canada, October 2019.

B. Bond, C. Hawblitzel, M. Kapritsos, K. R. M. Leino, J. Lorch, B. Parno, A. Rane, S. Setty, L. Thompson, "Vale: Verifying High-performance Cryptographic Assembly Code," *Proceedings of the 26th USENIX Security Symposium* (USENIX Security '17), Vancouver, BC, Canada, August 2017.

C. Hawblitzel, J. Howell, M. Kapritsos, J. R. Lorch, B. Parno, M. L. Roberts, S. Setty, B. Zill, "IronFleet: Proving Safety and Liveness of Practical Distributed Systems," *Proceedings of the 25th ACM Symposium on Operating Systems Principles* (SOSP '15), Monterey, CA, October 2015.

Service: Professor Kapritsos has served the division effectively in several roles, including undergraduate advising and membership on the graduate committee and the faculty search committee. Externally, Professor Kapritsos has served on a variety of high-profile program committees, including the most prestigious venues in his field. He is beginning to take on leadership roles in the community, serving as the workshop chair for the most recent iteration of SOSP. Additionally, over the last several years, he has taught the Systems Software Verification Summer School that he helped design. In addition to allowing him to strengthen his ties to industry, these summer classes are a benefit to CSE's students in that they led to a new course (EECS 498 Formal Verification of System Software), which Professor Kapritsos developed and taught for the first time in fall 2022.

External Reviewers:
Reviewer A: "Manos is an expert in distributed systems, and well known for his deep work in the area. If I could, I would hire him in an instant to join us here at [my institution], and I believe any other top department would do the same. He has my strong support for this promotion."

Reviewer B: "…Emmanouil Kapritsos is an exceptional researcher. His research work is scientifically deep and coherent. He has shown prowess not only in research output but also in academic qualities such as mentoring junior students and serving the community in leadership roles."

Reviewer C: "Prof. Kapritsos' work is outstanding. The number of papers he published in top venues stands out and makes him outstanding among his peers. I believe the research presented in these papers will have a long term impact..."

Reviewer D: "…Prof. Kapritsos does high-quality research, with high impact, on a difficult but highly important field. I believe his record would have no trouble fulfilling the requirements for

Tenure at [my institution], and I have no hesitation to recommend him for Promotion and Tenure at your institution."

Reviewer E: "I think extremely highly of Manos's research accomplishments. He has published outstanding results at top venues that have had significant impact, and he has helped educate the next generation of formal verification researchers through his summer school on systems software verification. He is a leader in automated verification of software systems, and I strongly support his promotion."

Summary of Recommendation: Professor Kapritsos 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 Manos Kapritsos for promotion to associate 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