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

Jason Mars, 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.    2012    University of Virginia, Computer Science, Charlottesville, VA
M.S.     2008    University of Virginia, Computer Science, Charlottesville, VA
B.S.     2005    University of Pittsburgh, Computer Science, Pittsburgh, PA

Professional Record:

2016 – present   CEO, Executive Team, Clinc, Inc., Ann Arbor, MI
2013 – present   Assistant Professor, Department of Electrical Engineering and Computer
                 Science, University of Michigan
2013 – 2013      Visiting Scientist, Platforms, Google, Mountain View, CA
2012 – 2013      Assistant Professor, Computer Science and Engineering, University of
                 California, San Diego, CA
2012 – 2012      Research Scholar, Computer Architecture Research, Intel Labs, Santa Clara, CA

Summary of Evaluation:

Teaching:  Professor Mars has taught both a required undergraduate course and two different graduate courses in computer architecture.  As the teaching record and student letters show, he is a dynamic, engaged, and well-respected instructor in the classroom and mentor to graduate students.  His teaching ratings are uniformly strong.  He has mentored seven Ph.D. students as co-chair, four of which he is considered to be the primary advisor.  Professor Mars has also advised three master's students and has been active with undergraduate major projects and mentoring post-doctoral scholars.  Undergraduates remark on his openness, availability, and enthusiasm for teaching.  Graduate students note his skill at providing growth opportunities and guidance

Research:  Professor Mars' research centers on warehouse-scale computer architecture design and implementation, addressing the level of computational organization commonly referred to as "cloud computing."  His approach relies on developing prototypes to generate real workloads, and then revising architectural designs in light of them.  The best-known of these is a voice-based intelligent assistant.  This tool allowed Professor Mars to make significant contributions to the design and architecture for intelligent-system workloads, which differ significantly from established benchmarks.  He has published over 30 full papers in the top venues for computer architecture during his time at Michigan.  The computer architecture community has identified

several of these as the very best published at any venue in their respective years. Professor Mars has successfully won grants from NSF (including CAREER), Ford Motor Company, and IBM.

Recent and Significant Publications:

Johann Hauswald, Michael A. Laurenzano, Yunqi Zhang, Hailong Yang, Yiping Kang, Cheng Li, Austin Rovinski, Arjun Khurana, Ronald G. Dreslinski, Trevor Mudge, Vinicius Petrucci, Lingjia Tang, Jason Mars, "Designing Future Warehouse Scale Computers for Sirius, An End-to-End Voice and Vision Personal Assistant," *ACM Transactions on Computer Systems (TOCS)* 2016.

Johann Hauswald, Michael A. Laurenzano, Yunqi Zhang, Cheng Li, Austin Rovinski, Arjun Khurana, Ronald G. Dreslinski, Trevor Mudge, Vinicius Petrucci, Lingjia Tang, Jason Mars, "Sirius Implications for Future Warehouse Scale Computers," *IEEE MICRO Top Picks*, 2016.

Jason Mars, Lingjia Tang, Robert Hundt, Kevin Skadron, Mary Lou Soffa, "Increasing Utilization in Warehouse Scale Computers Using Bubble-Up!" *IEEE Micro*, 2012.

Shih-Chieh Lin, Yunqi Zhang, Chang-Hong Hsu, Matt Skach, Md E Haque, Lingjia Tang, Jason Mars, "The Architectural Implications of Autonomous Driving: Constraints and Acceleration," *23th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2018.

Hailong Yang, Quan Chen, Moeiz Riaz, Zhongzhi Luan, Lingjia Tang, Jason Mars, "PowerChief: Intelligent Power Allocation for Multi-Stage Applications to Improve Responsiveness on Power Constrained CMP," *Proceedings of the 44th Annual International Symposium on Computer Architecture (ISCA)*, 2017.

Service: Professor Mars has been active in service to the Computer Science and Engineering Division, on the Graduate Admissions Committee and in undergraduate advising. Externally, he has served on an impressive number of program committees in the top publication venues in his area and has transitioned to leadership roles in several. He has a particular commitment to diversity, equity, and inclusion, serving as a member of the Steering Committee of the Computing Research Association's Underrepresented Minorities and Persons with Disabilities (URMD) Grad Cohort Workshop.

External Reviewers:
Reviewer A: "Dr. Mars is clearly a superstar. He has published dozens of papers in our top conferences, many of which are piling up citations and inspiring new research directions. ... Dr. Mars clearly meets the standard for promotion to Associate Professor with tenure at any top CS or ECE department, including my own institution."

Reviewer B: "…Jason has been a key force in broad community analysis of warehouse scale computers. . . . Jason's work would easily earn tenure at [my institution]."

Reviewer C: "He is a creative researcher with a clear and intuitive research vision that has led to significant results with broad impact. He clearly deserves this promotion."

Reviewer D: "…Prof. Mars has led the research community's efforts to understand emerging

applications. ... I strongly recommend Prof. Jason Mars for promotion to the rank of Associate Professor with tenure."

Reviewer E:  "Professor Mars has in a few short years established himself as a leader in cloud computing. ... The work is creative, technically insightful, appearing in the top venues, winning awards, and having impact on other researchers and industry."

Reviewer F:  "Jason has established himself as one of the premier young architects who understands all aspects of data center applications, system design and management."

Reviewer G:  "Jason is at the top of his generation in the computer architecture field. ... He would have been promoted early at [my institution] and in fact I thought he already was promoted at Michigan!  Promote him before he has five top job offers with tenure (including one from us)."

Reviewer H:  "I enthusiastically recommend Dr. Mars as a world-class research scientist who has and will continue to make major contributions to the field of computer architecture. ... By any standards, he deserves to become an associate professor at University of Michigan."

Summary of Recommendation:  Professor Mars 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 Jason Mars 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


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