

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

Michael J. Cafarella, 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.	2009	University of Washington, Computer Science, Seattle, WA
M.Sc.	2005	University of Washington, Computer Science, Seattle, WA
M.Sc.	1997	University of Edinburgh, Edinburgh, Scotland
B.A.	1996	Brown University, Computer Science and History, Providence, RI

Professional Record:

2014 – present	Faculty Associate in Michigan Survey Research Center, Institute for Social Research, University of Michigan
2010 – present	Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
2000 – 2002	Engineer, Tellme Networks, Mountain View, CA
1998 – 2000	Engineer, Marimba Corporation, Mountain View, CA

Summary of Evaluation:

Teaching: Professor Cafarella is an outstanding instructor who has consistently received enthusiastic student reviews. He has taught upper-level electives on databases (EECS 484) and web databases (EECS 485) with per-section enrollments typically exceeding 100 students, as well as the graduate-level course on databases (EECS 584). He has established a vigorous research group, and has graduated one Ph.D. student with another expected to graduate later this year. He has another five Ph.D. students in the pipeline. Professor Cafarella has advised several M.S. students and has directed a number of undergraduate major projects. Student letters indicate that he has been an effective and popular teacher in the classroom.

Research: Professor Cafarella is a prominent researcher in the field of data science with a focus on information extraction. His work involves researchers from social sciences, public health, and economics, and has resulted in technologies that have been licensed for commercialization. Spreadsheets often have a great deal of encoded structure that must be decoded by any extractor. Professor Cafarella has developed the leading system to address this problem, and the associated technology has been licensed to Tableau for commercialization. He is the co-creator of Hadoop, a new technology for the analysis of large data sets. Hadoop has become part of the core data processing systems used in Facebook, Yahoo!, Twitter and many other companies. Professor

Cafarella has a high-impact publication record at the top venues in his field. His work has been recognized by an NSF CAREER award and he has received support from DARPA, Dow Chemical Company, General Electric, and Google.

Recent and Significant Publications:

Yongjoo Park, Michael Cafarella and Barzan Mozafari, “Neighbor-Sensitive Hashing,” *Proceedings of the Very Large Database Endowment (PVLDB)* 9(3): 2016.

Zhe Chen, Michael Cafarella and H.V. Jagadish, “Long-tail Dictionary Extraction from the Web,” Web Search and Data Mining Conference (WSDM), 2016.

Chun-Hung Hsiao, Michael Cafarella and Satish Narayanasamy, “Using Web Corpus Statistics for Program Analysis,” Conference on Object-Oriented Programming, Systems, and Languages (OOPSLA), Portland OR, 2014.

Zhe Chen and Michael Cafarella, “Integrating Spreadsheet Data via Accurate and Low-Effort Extraction.” Conference on Knowledge Discovery and Data Mining (KDD), New York, 2014.

Dolan Antenucci, Michael J. Cafarella, Margaret C. Levenstein, Christopher Re and Matthew Shapiro, “Ringtail: Feature Selection for Easier Nowcasting,” *Proceedings of the 16th International Workshop on the Web and Databases (WebDB)*, New York, 2013.

Li Qian, Michael J. Cafarella and H.V. Jagadish, “Sample-Driven Schema Mapping,” SIGMOD Conference, 2012.

Eaman Jahani, Michael J. Cafarella and Christopher Re, “Automatic Optimization for MapReduce Programs,” *Proceedings of the Very Large Database Endowment (PVLDB)*, 4(6): 385-396, 2011.

Service: Professor Cafarella has made outstanding contributions to service. Internally, he has served on the graduate admissions committee and the faculty search committee. He also has served as an academic advisor to our undergraduate students. Professor Cafarella has been a key contributor to the data science initiative across campus. Externally, he has served on numerous program committees of the top-tier conferences in his field.

External Reviewers:

Reviewer A: “...Prof. Cafarella is one of the very best researchers in his cohort in the database field . . . With so much high-impact work, it is clear that it is due to good taste and understanding of trends, not simply lucky choices.”

Reviewer B: “...Mike is very smart and he has clearly demonstrated that he is capable of making significant contributions to the field . . . I have no doubt that he will continue to do very good research, be an excellent teacher and advisor, continue to provide service to the community, and reflect positively on the University of Michigan.”

Reviewer C: “Michael was an important player in helping to create the massive trend of Big Data analytics that is revolutionizing industry and science . . . This is a degree of impact that most computer scientists can only dream about, and Michael rightly deserves recognition for this.”

Reviewer D: "Mike has established a very impressive track record with tremendous impact, a record that many of us would aspire to . . . I have no hesitation recommending Mike's promotion."

Reviewer E: "...Michael has had more research impact in his short career than many scientists have in a lifetime. His work is creative, technically deep, and widely used. I think he's exactly the sort of person who Michigan should be tenuring."

Reviewer F: "...He appears passionate about applying technology to answer broader societal questions . . . We need much more of this kind of research in our community."

Summary of Recommendation: Professor Cafarella 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 Michael J. Cafarella for promotion to associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.



David C. Munson, Jr.
Robert J. Vlasic Dean of Engineering
College of Engineering

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