

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

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

Academic Degrees:

Ph.D.	2015	University of Kentucky, Lexington, Kentucky
B.S.	2010	University of Kentucky, Lexington, Kentucky
B.S.	2005	University of Louisville, Louisville, Kentucky

Professional Record:

2015-Present	Assistant Professor of Computer Science, University of Michigan-Flint, Michigan
--------------	---

Summary of Evaluation:

Teaching: Since his arrival in 2015, Professor Spradling has taught eight distinct courses in computational theories, algorithm analysis, and programming, ranging from Computer Science 175 (Problem Solving and Programming) to Computer Science 575 (Algorithm and Complexity Analysis). In addition, he has engaged a variety of students in research endeavors with him: five undergraduate students, one honors thesis student, and five graduate students.

His teaching philosophy is based on the principles of lifelong learning “both for myself and my students.” The main tenets of this philosophy include social inclusion, active citizenship, personal development, self-sustainability, competitiveness and employability. Professor Spradling scaffolds material so that students first take in new information, then practice in safe environments, eventually combining concepts through larger assignments using lectures, labs, and assignments. He has also worked on curriculum development in the areas of Algorithm Analysis (CSC 379) and on Object-Oriented Applications Programming Experience (CSC 325, with a faculty colleague). He is a sought-after advisor and he offered a large number of advising appointments early in 2020 when the professional advisor in his department was on a medical leave.

Student evaluations have an average score of 4.46 on the question, “Overall, this was an excellent course” and 4.71 on the question “Overall the instructor was an excellent teacher.” Students see Professor Spradling as always prepared for class and willing help them outside of classes as well. He uses Discord to facilitate student collaboration outside of the classroom as well as to continue to engage graduates of his courses in lifelong learning.

Research: Professor Spradling investigates and proposes computational solutions to prevent the spread and consumption of misinformation in cyberspace using optimization algorithms. His research seeks to answer questions about how distribution and consumption of news might evolve to simultaneously limit misinformation and protect freedom of speech. His recent work has focused upon two key aspects of the spread and consumption of misinformation, examining the problem of detectable social media botnets used to propagate misinformation as well as the problem of evaluating and labeling media prior

to consumption by the user. The long-term goal of his work is to establish a new paradigm for social media where users have trustworthy and well-understood tools to make informed choices about the content they choose to consume and share.

He has published seven conference papers (three co-authored with graduate students, one with an undergraduate student, and one sole-authored). He also has another work-in-progress manuscript to be submitted to a journal. His paper, “Uav collaborative search using probabilistic finite state machines,” was nominated for a Best Paper Award at the International Command and Control Research and Technology Symposium-Knowledge Systems for Coalition Operations in 2017. Several of his conference publications came from the International Conference on Computational Science and Computational Intelligence (sponsored by IEEE) with acceptance rates of 16-17%.

#### Recent and Significant Publications:

Spradling, M., Straub, J., Strong, J. (2020, June). Introducing ‘Nutrition Facts’ for Online Content. To appear in *2020 IEEE International Conference on Cyber Security and Protection of Digital Services (Cyber Security 2020)*.

Spradling, M., Allison, M., Tsogbadrakh, T., & Strong, J. (2019, December). Toward Limiting Social Botnet Effectiveness while Detection Is Performed: A Probabilistic Approach. In *2019 International Conference on Computational Science and Computational Intelligence (CSCI 2019)* (pp. 1388-1391).

Tsogbadrakh, T., & Spradling, M. (2019, June). Genetic Approach to Stable Partitioning in Online Role Based Hedonic Games. In *2019 IEEE Congress on Evolutionary Computation (CEC 2019)* (pp. 2840-2847).

Service: Professor Spradling’s departmental service includes work on two ad hoc committees, the graduate program portfolio assessment committee, and the undergraduate capstone assessment. As the chair of the program’s peer evaluation committee, he also worked to devise a new peer evaluation document which was adopted by the program and aimed to provide meaningful feedback to improve teaching. At the college level, he has served as a semester-replacement on the CAS Curriculum Committee, two terms on the Summer Interim Committee, and on the CAS Strategic Planning Mission and Vision Committee. Professor Spradling makes significant contributions with his service, often establishing written procedures and documentation of the committee’s work when none previously existed. He also served as the chair of the CAS Nominating Committee, participated in prospective student recruitment events, and he advised the Game Design student organization.

Professor Spradling has served as a reviewer for two top conferences in Artificial Intelligence, the International Joint Conference on Artificial Intelligence (IJCAI) and the Association for the Advancement of Artificial Intelligence Conference on Artificial Intelligence (AAAI). He also has served as a session co-chair for two sessions at the 6th Annual Conference on Computer Science and Computational Intelligence.

#### External Reviewers:

Reviewer (A): “The publications are good quality...”

Reviewer (B): “The submitted papers give me an overall good impression. The work seems solid, of high-quality and interesting with a societal relevance.”

Reviewer (C): "... he is active in research and he regularly publishes in relevant conferences; he identifies and solves problems from a variety of areas, from mitigating fake news to implementing search functionalities in swarms of unmanned vehicles"

Reviewer (D): "Dr. Spradling has supervised the work of several students. As a result, about three students were able to publish with him..."

Reviewer (E): "I was really impressed by the outstanding quality of these papers: more than once, while reading the papers, I thought that is a pity that some gems remain hidden for a long time before we suddenly discover them."

Reviewer (F): "I have read the candidate's 5 articles submitted for review and am impressed with the innovation and creativity of these works."

Summary of Recommendation:

Professor Spradling is a skillful and effective teacher who utilizes a wide variety of active and peer interaction methods to facilitate student motivation and life-long learning. His research has important social relevance as he uses optimization algorithms to detect and prevent the consumption of misinformation via the internet and he has demonstrated innovation and creativity in his methodologies. He also has a record of impactful service to his program, department, and college, as well as an evolving record of professional service. It is with the support of the College of Arts and Sciences Executive Committee that I recommend Matthew Spradling for promotion to associate professor of computer science, with tenure, Department of Computer Science, Engineering, and Physics, College of Arts and Sciences.

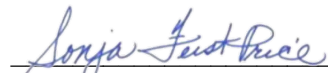
Recommended by:



---

Susan Gano-Phillips, Dean  
College of Arts and Sciences

Recommendation endorsed by:



---

Sonja Feist-Price, Provost and  
Vice Chancellor for Academic Affairs



---

Debasish Dutta, Chancellor  
University of Michigan – Flint

May 2021