**Tanmay Bhowmik**

|  |  |  |  |
| --- | --- | --- | --- |
| **Contact**  **Information** | 1725 Cypress Drive  Maryville  MO - 64468, USA | +1-662-617-3253  bhowmikt84@gmail.com  http://catpages.nwmissouri.edu/m/bhowmik/bhowmik/ | |
|  |  |  | |
| **Employment** | Assistant Professor of Computer Science (tenure-track)  Department of Mathematics, Computer Science and Information Systems  Northwest Missouri State University, USA | | Fall 2015-Present |
|  |  | |  |
|  | Postdoctoral Research Fellow  [National Strategic Planning and Analysis Research Center (nSPARC)](http://nsparc.msstate.edu/) Mississippi State University, USA | | Summer 2015 |
|  |  | |  |
| **Education** | [Mississippi State University, USA](http://www.msstate.edu/)  Ph.D., Computer Science  GPA: 4 out of 4 | | May 2015 |
|  |  | |  |
|  | M.S., Computer Science GPA: 4 out of 4 | | 2010 |
|  |  | |  |
|  | [National Institute of Technology, Durgapur, India](http://www.nitdgp.ac.in/)  B.Tech., Computer Science and Engineering GPA: 8.05 out of 10 (*First Class with Distinction*) | | 2007 |
|  |  | |  |
| **Honors and Awards** | 1. Distinguished Graduate Scholar, Mississippi State University   Bestowed upon only one graduate student in the college of engineering each Spring and Fall for excellence in research and publication. | | 2015 |
|  |  | |  |
|  | 1. Teaching Assistant of the Year, Mississippi State University   Bestowed upon one Ph.D. and one M.S. student in the university each year for excellence in teaching. | | 2015 |
|  |  | |  |
|  | 1. Spirit of State, Mississippi State University   Bestowed upon students who demonstrate an exceptional personal commitment to enhancing Mississippi State University campus life. | | 2015 |
|  |  | |  |
|  | 1. Graduate Student Publication Award, Mississippi State University | | 2015 |
|  |  | |  |
|  | 1. Information Assurance Certificate, Mississippi State University | | 2015 |
|  |  | |  |
|  | 1. Graduate Student Publication Award, Mississippi State University | | 2013 |
|  |  | |  |
|  | 1. Best Research Presentation, Empirical Software Engineering Research Group, Mississippi State University | | 2012 |
|  |  | |  |
|  | 1. Graduate Student of the Month, Dept. of CSE Mississippi State University | | April 2010 |
|  |  | |  |
|  | 1. Selected to Phi Kappa Phi Honor Society Mississippi State University | | 2009 |
|  |  | |  |
|  | 1. Full Scholarship for the Four Year B.Tech. Program in CSE   Government of India | | 2003-2007 |
|  |  | |  |
| **Peer-Reviewed Publications** | **Book Chapter**  [B1] **Tanmay Bhowmik**, Vander Alves, and Nan Niu. “An Exploratory Case Study on Exploiting Aspect Orientation in Mobile Game Porting.” In *Integration of Reusable Systems* (Thouraya Bouabana-Tebibel and Stuart H. Rubin eds.), Advances in Intelligent Systems and Computing, Volume: 263, Springer, 2014, pp. 241-261. | | 2014 |
|  |  | |  |
|  | **Referred Journal Papers** | |  |
|  |  | |  |
|  | [J5] **Tanmay Bhowmik**, Nan Niu, Prachi Singhania, and Wen Tao. “On the Role of Structural Holes in Requirements Identification: An Exploratory Study on Open Source Software Development.” Submitted to the *ACM Transactions on Management Information Systems*, vol. 6, no. 3, 2015, Article No. 10. | | 2015 |
|  |  | |  |
|  | [J4] **Tanmay Bhowmik**, Nan Niu, Juha Savolainen, and Anas Mahmoud. “Leveraging Topic Modeling and Part-of-Speech Tagging to Support Combinational Creativity in Requirements Engineering.” *Requirements Engineering Journal*, vol. 20, no. 3, 2015, pp. 253-280. | | 2015 |
|  |  | |  |
|  | [J3] **Tanmay Bhowmik**, Nan Niu, Wentao Wang, Jing-Ru C Cheng, Ling Li, and Xiongfei Cao. “Optimal Group Size for Software Change Tasks: A Social Information Foraging Perspective.” *IEEE Transactions on Cybernetics*, vol. PP, no. 99, 2015, pp. 1-12. | | 2015 |
|  |  | |  |
|  | [J2] Sandeep Reddivari, Shirin Rad, **Tanmay Bhowmik**, Nisreen Cain and Nan Niu. “Visual Requirements Analytics: A Framework and Case Study”, *Requirements Engineering Journal (REJ)*, Volume: 19, Issue: 3, 2014, pp. 257-279. | | 2014 |
|  |  | |  |
|  | [J1] Harun Pirim, Dilip Gautam, **Tanmay Bhowmik**, Andy D. Perkins, Burak Eksioglu, and Ahmet Alkan. “Performance of an Ensemble Clustering Algorithm on Biological Data Sets.” *Mathematical and Computational Applications*, Volume: 16, Issue: 1, 2011, pp. 87-96. | | 2011 |
|  |  | |  |
| **Peer-Reviewed Publications** | **Referred Conference Papers**  [C10] **Tanmay Bhowmik**. “Stakeholders’ Social Interaction in Requirements Engineering of Open Source Software.” Doctoral Symposium at the 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 25, 2014, pp. 467-472. | | 2014 |
|  |  | |  |
|  | [C9] **Tanmay Bhowmik**, Nan Niu, Anas Mahmoud, and Juha Savolainen. “Automated Support for Combinational Creativity in Requirements Engineering.” 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 25-29, 2014, pp. 243-252. **An extension has been invited to the “Requirements Engineering Journal” (cf. [J4]).** Acceptance rate: 27% (31 out of 115). | | 2014 |
|  |  | |  |
|  | [C8] Nan Niu, **Tanmay Bhowmik**, Hui Liu, and Zhendong Niu. “Traceability-Enabled Refactoring for Managing Just-In-Time Requirements.” 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 25-29, 2014, pp. 133-142. Acceptance rate: 27% (31 out of 115). | | 2014 |
|  |  | |  |
|  | [C7] **Tanmay Bhowmik**, Nan Niu, and Donna Reese. “Students vs. Professionals in Assisted Requirements Tracing: How Could We Train Our Students?” 121st ASEE Annual Conference and Exposition, Indianapolis, IN, USA, June 15-18, 2014. | | 2014 |
|  |  | |  |
|  | [C6] **Tanmay Bhowmik**, Vander Alves, and Nan Niu. “Porting Mobile Games in an Aspect-Oriented Way: An Industrial Case Study.” 14th IEEE International Conference on Information Reuse and Integration (IRI 2013), San Francisco, CA, USA, August 14-16, 2013, pp. 458-465. **Selected as a *best paper* and published in the book “Advances in Intelligent and Soft Computing” (cf. [B1]).** Acceptance rate: 26%. | | 2013 |
|  |  | |  |
|  | [C5] Nan Niu, Juha Savolainen, **Tanmay Bhowmik**, Anas Mahmoud, and Sandeep Reddivari. “A Framework for Examining Topical Locality in Object-Oriented Software.” 36th IEEE Computer Software and Applications Conference (COMPSAC 2012), Izmir, Turkey, July 2012, pp. 219-224. Acceptance rate: 30% (72 out of 237). | | 2012 |
|  |  | |  |
|  | [C4] Nan Niu, Vander Alves, and **Tanmay Bhowmik**. “Portability as an Aspect: Rethinking Modularity in Mobile Game Development.” 10th International Conference on Aspect-Oriented Software Development (AOSD 2011), Porto de Galinhas, Pernambuco, Brazil, March 2011, pp. 3-4. | | 2011 |
|  |  | |  |
|  | [C3] Harun Pirim, Dilip Gautam, **Tanmay Bhowmik**, Andy Perkins, and Burak Eksioglu. “Performance evaluation of a community structure finding algorithm using modularity and C-rand measures.” IEEE International Joint Conference on Neural Networks, Barcelona, Spain, July 2010, pp. 1-8. | | 2010 |
|  |  | |  |
|  | [C2] Harun Pirim, Dilip Gautam, **Tanmay Bhowmik**, Andy D. Perkins, Burak Eksioglu, and Ahmet Alkan. “Performance of an Ensemble Clustering Algorithm on Biological Data Sets.” International Symposium on Computing in Science and Engineering, Kusadasi, Turkey, June 2010, pp. 723-731. | | 2010 |
|  |  | |  |
|  | [C1] **Tanmay Bhowmik**, Nan Niu, and Edward Allen. “Modular Development and Verification of Domain Requirements via Model Checking.” 48th ACM Southeast Conference (ACMSE 2010), Oxford, Mississippi, USA, April 2010, Article No. 58. | | 2010 |
|  |  | |  |
| **Peer-Reviewed Publications** | **Submitted Conference Paper**  [CS1] Nan Niu, Wentao Wang, Arushi Gupta, and **Tanmay Bhowmik**. “Towards Interactive Term-Based Relevance Feedback for Requirements-to-Code Tracing.” Submitted to the 38th International Conference on Software Engineering (ICSE 2016), (under review). | | 2016 |
|  |  | |  |
| **Peer-Reviewed Publications** | **Referred Workshop Paper**  [W2] **Tanmay Bhowmik** and Sandeep Reddivari. “Resolution Trend of Just-in-Time Requirements in Open Source Software Development.” 1st International Workshop on Just-In-Time RE (JIT RE 2015), in affiliation with the 23rd IEEE International Requirements Engineering Conference (RE 2015), Ottawa, Canada, Aug 25, 2015, (in press). | | 2015 |
|  |  | |  |
|  | [W1] Nan Niu, Sandeep Reddivari, Anas Mahmoud, **Tanmay Bhowmik**, and Songhua Xu. “Automatic Labeling of Software Requirements Clusters.” 4th International Workshop on Search-Driven Development: Users, Infrastructure, Tools, and Evaluation (SUITE 2012), in affiliation with the 34rd International Conference on Software Engineering (ICSE 2012), Zurich, Switzerland, June 5, 2012, pp. 17-20. Acceptance rate: 20%. | | 2012 |
|  |  | |  |
| **Research Proposal Writing** | 1. Assisted my advisor, with data collection, results and analysis, in writing research proposals that have been awarded: | | 2010-2014 |
|  | * [SHF: EAGERGrant from the US National Science Foundation (NSF)](http://www.nsf.gov/awardsearch/showAward?AWD_ID=1238336). | |  |
|  | * [SERRIGrant from the US Department of Homeland Security (DHS)](http://www.serri.org/Pages/serri.aspx). | |  |
|  | 1. Attended multiple US National Science Foundation (NSF) grant proposal writing workshops organized by Mississippi State University. | | 2011-2013 |
|  |  | |  |
|  | 1. Currently writing research proposals that I plan to submit for the following grants: | | 2015-2016 |
|  | * Theoretical and Applied Research Grant from Northwest Missouri State University | |  |
|  | * [SHF: EAGERGrant from the US National Science Foundation (NSF)](http://www.nsf.gov/awardsearch/showAward?AWD_ID=1238336). | |  |
|  |  | |  |
| **Technical Presentations** | **Invited Talk**   1. University of Alabama Department of Computer Science’s Colloquium Series, February 3, 2015. http://eng.ua.edu/events/?ID=3365 | | 2015 |
|  |  | |  |
|  | **Conference Presentations** | |  |
|  |  | |  |
|  | 1. Doctoral Symposium at the 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 25, 2014. | | 2014 |
|  |  | |  |
|  | 1. 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 25-29, 2014. | | 2014 |
|  |  | |  |
|  | 1. 121st ASEE Annual Conference and Exposition, Indianapolis, IN, USA, June 15-18, 2014. | | 2014 |
|  |  | |  |
|  | 1. 14th IEEE International Conference on Information Reuse and Integration (IRI 2013), San Francisco, CA, USA, August 14-18, 2013. | | 2013 |
|  |  | |  |
|  | 1. 48th ACM Southeast Conference (ACMSE), Oxford, Mississippi, USA, April 15-17, 2010. | | 2010 |
|  |  | |  |
|  | **Campus and Departmental Talks**   1. Research presentation, Advisory Board of the Department of Computer Science and Engineering, Mississippi State University. | | 2014 |
|  |  | |  |
|  | 1. Research presentation in every semester, Empirical Software Engineering Research Group, Mississippi State University. | | 2009-2015 |
|  |  | |  |
| **Training on Teaching And Learning** | **Preparing Future Faculty Program**  Graduate School and Center for Teaching and Leaning  Mississippi State University | | 2012-2013 |
|  | * Successfully completed the year-long program followed by a three credit hour course. | |  |
|  | * From the whole university, about twenty Ph.D. students are selected for the program through a competitive selection process. | |  |
|  | * Learned methods for teaching, learning, research, and service. | |  |
|  | * More information is available on: http://www.grad.msstate.edu/development/pff/ | |  |
|  |  | |  |
| **Teaching**  **Experience** | **Assistant Professor**  Department of Mathematics, Computer Science and Information Systems  Northwest Missouri State University, USA | | 2015-Present |
|  |  | |  |
|  | **Course:** CSIS 525 – Theory and Implementation of Programming Languages, CSIS 563 – Developing Web Applications and Services (3 sections) | |  |
|  | **Class Size:** CSIS 525 – 47 students, CSIS 563 – 40 students in each section | |  |
|  |  | |  |
|  | **Instructor**-**of**-**Record**  Department of Computer Science and Engineering  Mississippi State University | | 2014-2015 |
|  |  | |  |
|  | **Course:** CSE 2813 – Discrete Structures | |  |
|  | **Class Size:** 54 students (Spring 2015), 31 students (Fall 2014) | |  |
|  | **Official Evaluation:** 4.7 (Spring 2015), 4.8 (Fall 2014) on a scale of 5.0 | |  |
|  | *Average official evaluation in this course for other instructors is 4.1.* | |  |
|  |  | |  |
|  | **Responsibilities:** Teaching the courses with 100% responsibility. | |  |
|  | * Redesigned the course based on: | |  |
|  | * Training received during the “Preparing Future Faculty” program at Mississippi State University. | |  |
|  | * A combination of the teaching and learning principles explored by Ambrose et al. (2010), and by Newcomb and colleagues (2004). | |  |
|  | * The recommendations offered in “Educating the Engineer of 2020 – Adapting Engineering Education to the New Century”, published by the National Academy of Engineering. | |  |
|  | * Detailed Syllabus and Course Calendars are available on my website: http://catpages.nwmissouri.edu/m/bhowmik/bhowmik/ | |  |
|  |  | |  |
|  | **Teaching Assistant** | | 2009-2010 |
|  | Department of Computer Science and Engineering  Mississippi State University | |  |
|  |  | |  |
|  | CSE 6833 - Introduction to Algorithms (class size: 28)  CSE 2383 - Data Structure (class size: 32) | | Fall 2010 |
|  |  | |  |
|  | CSE 3813 - Introduction to Formal Languages and Automata (class size: 29)  CSE 6833 - Introduction to Algorithms (class size: 26)  CSE 6613 - Introduction to Biocomputing (class size: 25) | | Fall 2009 |
|  |  | |  |
|  | CSE 3813 - Introduction to Formal Languages and Automata (class size: 33)  CSE 6733 - Introduction to Operating Systems (class size: 28) | | Spr. 2009 |
|  |  | |  |
|  | **Responsibilities:** All duties of a regular Teaching Assistant. | |  |
|  | * Taught class as a guest instructor. | |  |
|  | * Collaborated on quiz and exam development with the instructor. | |  |
|  | * Graded all written works, including final exam papers and assignments. | |  |
|  | * Met students at a regular basis to help them with course works. | |  |
|  |  | |  |
| **Teaching**  **Interests** | * [CIS 200: Fundamentals of Software Design and Implementation](https://www.cis.ksu.edu/sites/default/files/CIS200_SyllabusS12.pdf) * Software Engineering * Requirements Engineering * Software Testing and Quality Assurance * Software Reuse and Integration * Formal Languages * Theory and Implementation of Programming Languages | |  |
|  |  | |  |
| **Research**  **Experience** | **Postdoctoral Research Fellow**  [National Strategic Planning and Analysis Research Center (nSPARC)](http://nsparc.msstate.edu/) Mississippi State University | | Summer 2015 |
|  | Supervisors: Domenico Parisi and Drew Boyles | |  |
|  | Project: Connecting SNAP Participants to the Growing Demand for Middle-Skill Jobs. | |  |
|  | Activities: | |  |
|  | * Analyzing legacy systems with different government agencies and eliciting requirements for the new software system. | |  |
|  | * Developing software requirement specification for the new software system. | |  |
|  |  | |  |
| **Research**  **Experience** | **Research Assistant**  [National Strategic Planning and Analysis Research Center (nSPARC)](http://nsparc.msstate.edu/) Mississippi State University | | 2012-2014 |
|  | Supervisors: Steven Grice and Martin Duclos | |  |
|  | Project: Statewide Longitudinal Data System (SLDS) Project[[1]](#footnote-1) | |  |
|  | Activities: | |  |
|  | * Collecting data relevant to education, workforce, and economic development in the state of Mississippi from different government agencies. | |  |
|  | * Analyzing data and crating a reporting system to help answer critical policy questions in relevant areas. | |  |
|  |  | |  |
| **Research**  **Experience** | **Research Assistant**  [Department of Computer Science and Engineering](http://www.cse.msstate.edu/)  Mississippi State University | | 2011-2012 |
|  | Supervisor: Nan Niu | |  |
|  | Project: [US National Science Foundation(NSF), SHF: EAGER: “Clustering Programming Artifacts to Enrich Code Foraging Environment” (PI: Nan Niu)](http://www.nsf.gov/awardsearch/showAward?AWD_ID=1238336)[[2]](#footnote-2) | |  |
|  | Activities: | |  |
|  | * Developing an experimental framework to assess topical locality in software. | |  |
|  | * Looking at software maintenance from the perspective of information foraging, and creating new set of metrics to guide profitable code foraging. | |  |
|  | * Comparing well-established source-code clustering algorithms to discover effective enrichment mechanisms for code foraging. | |  |
|  |  | |  |
|  | Project:[US Department of Homeland Security(DHS), SERRI: Real-Time Identification and Monitoring of Barge-Carried Hazardous Commodities (PI: Mingzhou Jin, Co-PI: Nan Niu)](http://www.serri.org/Pages/serri.aspx) | |  |
|  |  | |  |
|  | Activities: | |  |
|  | * Collecting routing data for barge-carried hazardous commodities. | |  |
|  | * Analyzing data to create a prediction module that facilitates real-time identification and monitoring of such commodities. | |  |
|  | * Creating a software system that implements the prediction module and provides such identification and monitoring facilities. | |  |
|  |  | |  |
| **Research**  **Experience** | **Research Assistant**  Department of Computer Science and Engineering  Mississippi State University  Supervisor: Andy Perkins  Project:Improved Computational Tools for Next-Generation Sequence Data Processing and Analysis | | 2010 |
|  | Activities: | |  |
|  | * Developing algorithms and techniques to improve DNA sequence data processing. * Integrating those algorithms, techniques, and existing tools to facilitate DNA sequence data processing and analysis in an improved manner. | |  |
|  |  | |  |
| **Research**  **Interests** | * Social Aspects in Software Engineering * Requirements Engineering | | 2009-Present |
|  | * Software Evolution | |  |
|  | * Software Engineering for Mobile Devices | |  |
|  | * Software Maintenance | |  |
|  | * Software Ecosystem | |  |
|  | * Refactoring | |  |
|  | * Software Security | |  |
|  | * Software Engineering Education | |  |
|  |  | |  |
| **Service**  **Activities** | **Program Committee**   1. 1st International Workshop on Just-In-Time RE (JIT RE 2015), in affiliation with the 23rd IEEE International Requirements Engineering Conference (RE 2015), Ottawa, Canada, Aug 25 2015. | | 2015 |
|  |  | |  |
|  | **Professional Reviewing** | |  |
|  |  | |  |
|  | 1. Reviewer for the Information and Software Technology Journal (Elsevier). | | 2013-2014 |
|  |  | |  |
|  | 1. Reviewer for the Journal of Systems and Software (Elsevier). | | 2010 |
|  |  | |  |
|  | **Department/University Service** | |  |
|  |  | |  |
|  | 1. Committee Member, Publicity and Recruitment Committee of Computer Science and Information Systems, Northwest Missouri State University. | | 2015 |
|  |  | |  |
|  | 1. Committee Member, Curriculum Committee of M.S. in Applied Computer Science, Northwest Missouri State University. | | 2015 |
|  |  | |  |
|  | **Other Professional Service** | |  |
|  |  | |  |
|  | 1. Judge, Spring Undergraduate Research Symposium, Mississippi State University, April 23, 2015. | | 2015 |
|  |  | |  |
|  | 1. Student Volunteer, 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 25-29, 2014. | | 2014 |
|  |  | |  |
|  | 1. Webmaster, Empirical Software Engineering Research Group[[3]](#footnote-3), Mississippi State University. | | 2014-  Present |
|  |  | |  |
|  | 1. Mentored a Computer Science major undergraduate student for two years at Mississippi State University. | | 2012-2013 |
|  |  | |  |
|  | 1. Advised two high school students during the summer research program at Mississippi State University (one student eventually enrolled into the CSE program). | | 2012-2013 |
|  |  | |  |
| **Extra- Curricular Involvements** | 1. Board Member, Starkville Multicultural Lion’s club   Starkville, Mississippi | | 2014-  2015 |
| 1. Volunteer, Starkville Multicultural Lion’s club   Starkville, Mississippi | | 2013-  Present |
|  |  | |  |
|  | 1. Vice-President Communication, Bangladesh Association   Mississippi State University | | 2010 |
|  |  | |  |
|  | 1. Webmaster, Bangladesh Association   Mississippi State University | | 2009-2010 |
|  |  | |  |
|  | 1. Coordinator, Chayanika   The Art and Cultural Club of NIT Durgapur, India | | 2006 |
|  |  | |  |
| **Professional Affiliations** | 1. IEEE Computer Society 2. Association for Computing Machinery (ACM) 20 | | 2013  13-Present |
|  |  | |  |
|  | 1. ACM, Mississippi State University Chapter | | 2010 |
|  |  | |  |

1. https://lifetracks.ms.gov/SitePages/Home.aspx [↑](#footnote-ref-1)
2. http://www.nsf.gov/awardsearch/showAward?AWD\_ID=1238336 [↑](#footnote-ref-2)
3. http://web.cse.msstate.edu/~ese/ [↑](#footnote-ref-3)