Professor Hridesh Rajan, Dept. of Computer Science, Iowa State University

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Professional Preparation & Appointments

Professor-In-Charge	ISU Data Science Program	2017 - Present
Visiting Faculty	University of Bristol	Fall 2018
Professor	Iowa State University	2016 - Present
Visiting Faculty	Harvard University	Fall 2017
Associate Professor	Iowa State University	2011 - 2016
Visiting Faculty	The University of Texas, Austin	Summer 2012
Assistant Professor	Iowa State University	2005 - 2011
Ph.D. Computer Science	The University of Virginia	2001 - 2005
M.S. Computer Science	The University of Virginia	2001 - 2004
Member of Technical Staff	Bell Labs, Lucent Technologies, India	2000 - 2001
B.Tech. Computer Sc. and Eng.	Indian Institute of Technology, Varanasi	1996 - 2000

Major Awards and Recognitions

- 2018-19 Fulbright U.S. Scholar
- 2017 ACM Distinguished Member (ACM Senior member in 2014)
- 2017 Inducted into Sigma Xi, The Scientific Research Honor Society
- 2016-17 Exemplary Mentor of Junior Faculty, Iowa State University
- 2016 Kingland Professorship
- 2016-17 Emerging Leaders Academy (nominated by the Chair and LAS Dean, and accepted)
- 2012 Big-12 Fellowship
- 2010 LAS Early Achievement in Research Award
- 2009 US National Science Foundation (NSF) CAREER Award

Selected Service Roles

- *2020* General Chair, *ACM SIGPLAN SPLASH/OOPSLA Conference*
- *2017–present* Associate Editor, *IEEE Transactions on Software Engineering*
- *2015–present* Associate Editor, *Software Engineering Notes*
- *2018–present* Program Evaluator, *ABET Computing Accreditation Commission (CAC)*
- *2014–present* Chair, *Graduate Admissions & Recruitment, Dept. of Computer Science*

Research Highlights

- Foundational research in software engineering and programming languages that has appeared at top-tier conferences and journals such as ECOOP, ESOP, OOPSLA, ICSE, FSE, TOSEM, and also has had widespread impact.

  – Founded and lead the **Boa** project that is designing a programming language for big data and its shared research cyberinfrastructure for easing analysis of ultra-large-scale software repositories http://boa.cs.iastate.edu. Main goal is to design better abstractions for data science. Research results span programming languages, software engineering, and data intensive computing.

  Since its inauguration in May 2013, 1000+ researchers from over 30+ countries are registered to use Boa (the graphics to the right presents a geo-coding of Boa users). Over three dozen research publications by external Boa users have appeared so far that have made use of Boa.

– Founded and lead the **Panini** project that is designing techniques to help sequentially trained programmers make less concurrency mistakes see: `http://paninij.org`. Panini is enabling modular, scalable reasoning about concurrent programs. Research results span programming languages, software engineering, and concurrency & parallelism. The graphics to the right shows downloads of the Panini compiler since its public release in August 2013.
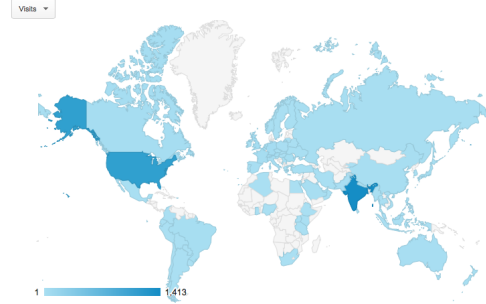
- Secured $5,243,429 in the form of 11 grants as the principal investigator (PI). Out of these 7 are regular NSF grants, and one is a CAREER Award. Additionally, helped secure $1,328,214 in the form of 2 NSF grants as a Co-PI. Also, secured $524,467 in 7 internal grants as either the PI or a Co-PI, including an ISU Presidential Initiative for Interdisciplinary Research (PIIR).

- Leading a transdisciplinary research initiative on *Theoretical and Applied Data Science (TADS)*. The TADS initiative includes over 30 faculty investigators from Computer Science, Statistics, Mathematics, Electrical Engineering, and application disciplines.

- Contributed (or currently contributing) to the research-based training of a diverse body of 22 graduate students and over 45 undergraduate students between 2005 - 2019

  - **Graduate Students:** Shibbir Ahmed (PhD), Hamid Bagheri (PhD), Sumon Biswas (PhD), Yijia Huang (MS), Md. Johirul Islam (PhD), Samantha Khairunnesa (PhD), Eric Lin (PhD), Giang Nguyen (PhD), Hung Phan (PhD), Rangeet Pan (PhD), and Mohammad Wardat (PhD)
  - **Graduate Theses Completed:** G. Upadhayaya (PhD Fall 2017, MS Spring 2015, Huawei R&D), M. Bagherzadeh (PhD Summer 2016, MS Fall 2011, Assistant Professor at Oakland), Y. Long (PhD Spring 2016, MS Spring 2010, Google Inc.), R. Dyer (Postdoc 2013-14, PhD Fall 2013, MS Fall 2008, Assistant Professor at BGSU), T. Sondag (PhD Fall 2011, MS Fall 2009, Researcher at Intel Labs), J. Maddox (MS Summer 2018), S. Khairunnesa (MS Fall 2017), R. Ramu (MS Fall 2017), N. Tiwari (MS Spring 2017), G. Upadhayaya (MS Spring 2015), E. Lin (MS Spring 2015), H. Narayanappa (MS Spring 2010), Y. Hanna (MS Fall 2008), M. Hosamani (MS Fall 2007), R. Setty (MS Spring 2008), J. Jalan (MS Fall 2009)
  - **Undergraduate Students:** Robert Schmidt, Matthew Pauk, (Mentored over 45 undergraduate research assistants between 2005-2019.)

Teaching, Service, and Curriculum Development Highlights

- Co-led development and approval of three new degree programs at Iowa State University: a Data Science Minor, a Data Science Certificate, and a Data Science B.S. degree. Also, co-designed and co-developed four new integrative courses for these programs.

- Developed and revised a new pedagogy and a textbook draft to teach programming languages and functional programming to students that start in CS programs that teach an imperative language such as Java that led to 20+% improvement in the success rate.

- Founded and organized four editions of the Midwest Big Data Summer School, an annual event focused on getting early career researchers started with Big Data analytics. Each edition was attended by a diverse group of 140-150 participants.

- Substantially increased diversity and quality of the graduate student body. Recruited several students from under-represented groups, countries, and top institutions. Increased graduate student body from 100+ to 200+ during my leadership.