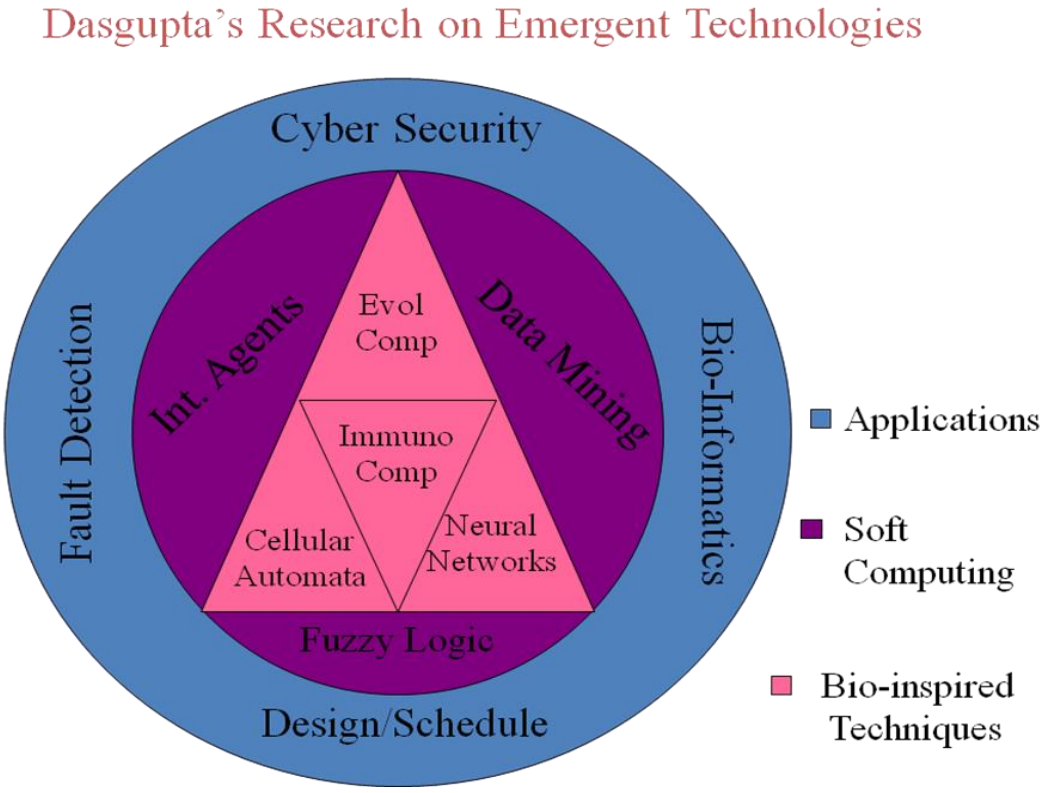
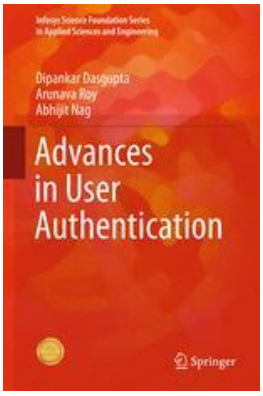
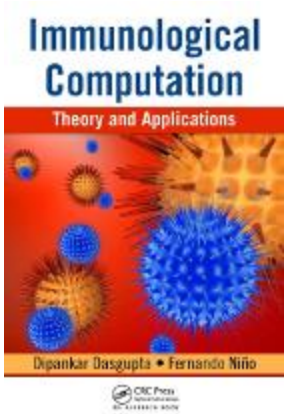
Dipankar Dasgupta's Research Statement:

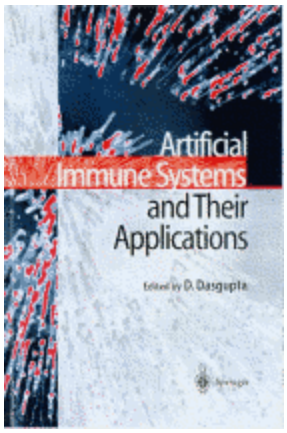
Background: Prof. Dasgupta's research cover broad areas of computational intelligence models (i.e. AI and Machine Learning) for Information Technology in a specific design and development of intelligent software solutions inspired by natural processes. The figure highlights his primary research interests in bio-inspired

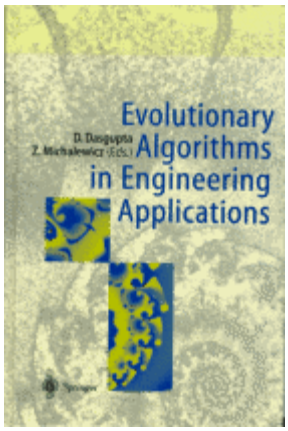


techniques (inner triangle), research on other soft/intelligent computing techniques (inner circle), and wide variety of real-world applications (indicated by outer ring). His multi-disciplinary research resulted in more than 260 publications and two textbooks, two edited books and several co-edited journals, volumes and conference proceedings. Particularly, his latest graduate textbook on *Advances in User Authentication* published by Springer-Verlag (August 2017 (already having 7900 downloads according to Bookmetrix); another graduate textbook on Immunological Computation was published by CRC press in 2008 (having 273 citations). Dr. Dasgupta's edited book on Artificial Immune Systems was the first book in the field and widely used as a reference book published in 1999 (having 4750 downloads); it also was translated into Russian. Another edited book on Evolutionary Algorithms in Engineering Applications in 1996 (which has 6690 downloads and 574 citations). He is one of the founding fathers of the new field of artificial immune systems and conducted significant research to develop robust tools for Digital Immunity (report in Computer World Magazine). The book on Artificial Immune Systems was the first book in the field and widely used as a reference book.

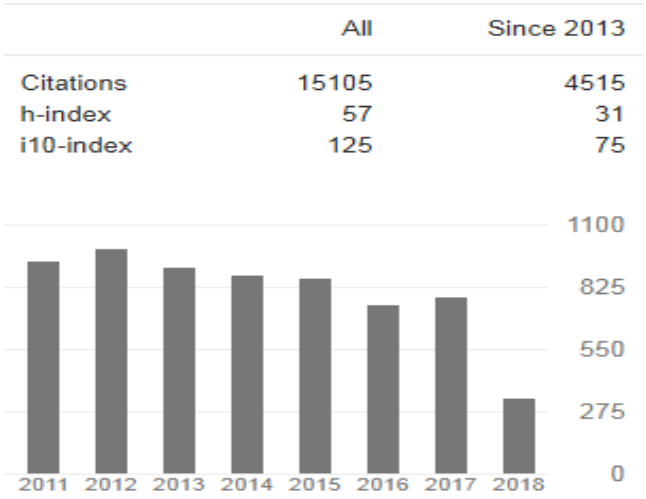








A search for "Dipankar Dasgupta" on Google Scholar shows the citation statistics (accessed on July 1, 2018) which indicate that his publications are widely cited and, therefore, influencing the research community. Figure below shows Dasgupta's world ranking for Top Scientists in Computer Science and Electronics (retrieved on December 31, 2018).



During (my previous sabbatical) year 2003-04, he worked at the NASA Ames Research Center in California's Silicon Valley and developed a software tool called MILD (Multi-level Immune Learning Detection) for intelligent fault detection; details of that work is in NASA newsletter (November 2004, page 2). Dr. Dasgupta was in editorial board of 5 journals, the chair of IEEE Task Force on Artificial Immune Systems and has been organizing IEEE Symposium in Computational Intelligence in Cyber Security since 1997. He is an Advisory Board member of Geospatial Data Center (GDC) at Massachusetts Institute of Technology (MIT) (http://geospatial.mit.edu/advisors_security.html) since 2010 and worked on joint research projects with MIT. Dr. Dasgupta has received five Best Paper Awards at international conferences (1996, 2006, 2009, 2011 and 2017), two Best Runner-Up Paper Awards (2013 and 2014) and several special recognition from international organization which include 2014 ACM SIGEVO Impact Award, ACM Distinguished Speaker. In 2012, he received the Willard R. Sparks Eminent Faculty Award, the highest faculty honor of the University of Memphis. Among many faculty awards over the years include *Sigma Xi* Research Paper Award, Donovan Professorship, *Distinguished Research Award* (CASDRA) twice, *Early*

Career Research Award (ECRA), Dr. Pat E. Burlison Professorship *and* William Hill Professorship from the University of Memphis.

In August 2009, the National Cyber Leap Year Summit was organized at the request of the White House Office of Science and Technology Policy and the Office of the Assistant Secretary of Defense Networks and Information Integration. The Federal Networking and Information Technology Research and Development (NITRD) Program selected Dr. Dasgupta as one of the Co-Chair for the to lead the Health-Inspired Network Defense working group (section 6, starting page 46), the results of which have led to a new research program within the Department of Homeland Security's Science and Technology. His Immunological Computation work also inspired DARPA lunching research programs like Self Regenerative Systems (SRS) and CRASH. This work was also mentioned as one of the focus Area (Nature-Inspired Solutions in Page 9) in *National Strategic Plan for the Federal Cybersecurity Research and Development Program*, Executive Office of the President National Science and Technology Council, December 2011.