

Abhijit Kumar Nag, Ph.D.

Department of Computer Information Systems
Texas A&M University-Central Texas
1001 Leadership Place, FH 323P, Killeen, TX 76549.

Education

Ph.D. in Computer Science

December 2016.

The University of Memphis, Memphis, TN

Dissertation: An Adaptive Strategy towards the Selection of Authentication Factors in Multi-factor Authentication (MFA) system.

Master of Science in Computer Engineering

August 2012

The University of Memphis, Memphis, TN

Thesis: Semantic-sensitive Query Expansion Method for Short-text Analytics and Mining.

Appointments

01/2017- present

Assistant Professor, Department of Computer Information Systems,
Texas A&M University-Central Texas, Killeen, TX

09/2012-12/2016

Doctoral Research Assistant, Department of Computer Science,
The University of Memphis, Memphis, TN.
Project funding agency: IARPA, NSA, FEMA, and NSF.

06/2011-04/2012

Software Developer-Testing and Remediation at FedEx Services
World Tech Center, Collierville, TN.

09/2009-05/2011

Graduate Research Assistant, Department of Computer Engineering,
The University of Memphis, Memphis, TN.
Project funding agency: NSF.

Teaching Interest

Cyber Security, Information Security and Risk Management, Networking Systems, Digital Forensics, Data Mining, Machine Learning and Big Data Analysis.

Research Interest

Computer and Network Security, Authentication Systems, Cyber Security, Cyber-Physical Systems, Anomaly Detection, Bio-inspired Computing, Data Mining, Machine Learning.

Invention Disclosure (Patent Application)

United States Utility Patent Application

Serial No. **14/968676**

Entitled: Adaptive Multi-factor Authentication System

Filed: December 14, 2015.

Status: Received Allowance.

United States Provisional Patent Application
Serial No. **62/262,626**
Entitled: Adaptive Multi-factor Authentication System
Filed: December 04, 2015.

Teaching and Mentoring Experience

Assistant Professor, Texas A&M-Central Texas

- Courses taught
 - CIS 3347: Data Communication and Infrastructure Summer 2017, Spring 2018
 - CIS/COSC 4341: IT Security and Risk Management Spring 2017
 - CIS 4345: Network and Systems Security Spring and Fall 2017, Spring 2018
 - CIS/COSC 4378: Comprehensive Networking Spring and Fall 2017, Spring 2018
 - COSC 3343: Computer Architecture Fall 2017
 - CIS 5302: Procedural Language Programming and Design Summer 2017

Guest lecturer, The University of Memphis

- COMP 7327/8327: Network/Internet Security
- COMP 7125: Computer Forensics
- COMP 4410/6410: Computer Security

Mentor of Capstone Project, The University of Memphis

- Mentored a team of four undergraduate students to complete their final year software project (COMP 4882).
- Provided support in areas of design, analysis, and implementation of the software project, which was developed on the Android platform.
- Served as a customer for the group to provide valuable feedback throughout the development phases (alpha and beta) of the project.

Lecturer, Department of Computer Science and Engineering Premier University, Chittagong, Bangladesh-4203.

- Taught the following courses: Microprocessor and Microcontrollers, Multimedia and Image Processing, Foundations of Computer Science, AutoCAD (Mechanical Engineering Drawing)
- Prepared, administered and conducted midterm and final exams.
- Graded exams, term papers, and laboratory reports.
- Mentored four groups of undergraduate students in their final year software projects.
- Worked as a department coordinator to prepare the course curriculum for undergraduate courses.

Industry Experience

FedEx Services- World Tech Center (WTC), Collierville, TN.

Role: Software Developer-Testing and Remediation as a consultant.

Project: Shopfloor Management in Air Ops Systems Development

- Developed a customer based solution to provide a scalable system which increased the search performance of millions of customer records in real time.
- Integrated different modules and worked on a collaborative project with three teams to build a tailored, robust and scalable product for FedEx Services.

Research Publications

Journal

1. Dipankar Dasgupta, Abhijit Kumar Nag, Denise Ferebee, Sanjib Kumar Saha, Kul Prasad Subedi, Arunava Roy, Alvaro Madero, Abel Sanchez, John R. Williams. Design and implementation of Negative Authentication System. International Journal of Information Security, November 2017.
2. Dipankar Dasgupta, Arunava Roy, and Abhijit Kumar Nag. "Toward the design of adaptive selection strategies for multi-factor authentication." Computers & Security in Elsevier, September 2016.

Conference

3. Abhijit Kumar Nag, Arunava Roy, and Dipankar Dasgupta. An Adaptive Approach towards the Selection of Multi-factor Authentication. In Computational Intelligence, 2015 IEEE Symposium Series on, vol., no., pp.463-472, 7-10 Dec. 2015.
4. Sanjib Kumar Saha, Abhijit Kumar Nag, and Dipankar Dasgupta. "Human-Cognition-Based CAPTCHAs." IT Professional 17, no. 5 (2015): 42-48.
5. Dipankar Dasgupta, Denise Ferebee, Sanjib Saha, Abhijit Kumar Nag, Alvaro Madero, Abel Sanchez, John William, Kul Prasad Subedi. G-NAS: A Grid-Based Approach for Negative Authentication. In the proceedings of Symposium on Computational Intelligence in Cyber Security (CICS) at IEEE Symposium Series on Computational Intelligence (SSCI). Orlando, Florida: December 9-12, 2014.
6. Abhijit Kumar Nag, Dipankar Dasgupta, Kalyanmoy Deb. An Adaptive Approach for Active Multi-Factor Authentication. In the proceedings of 9th Annual Symposium on Information Assurance (ASIA). Albany, NY: June 3-4, 2014.
7. Abhijit Kumar Nag, Dipankar Dasgupta. An Adaptive Approach for Continuous Multi-factor Authentication in an Identity Eco-System. In Cyber and Information Security Research (CISR) Conference, Oak Ridge National Laboratory. Oak Ridge, TN, USA: April 8-10, 2014.

Patent Application

8. Dipankar Dasgupta, Abhijit Kumar Nag, and Arunava Roy. "Adaptive multi-factor authentication system." U.S. Patent Application 14/968,676, filed December 14, 2015. (**Received Allowance**)

Book

9. Dipankar Dasgupta, Arunava Roy and Abhijit Kumar Nag, "Advances in User Authentication", Springer-Verlag, September 2017.

Awards and Honors

- **Best Paper Runner-up** Award for the conference paper, entitled "*An Adaptive Approach for Continuous Multi-factor Authentication in an Identity Eco-System*" in April 2014.

Invited/Accepted Talk

- Presented a tutorial on a topic titled “*Computational Intelligence in User Identity Management*” at IEEE SSCI 2017 conference at Honolulu, Hawaii (November 28, 2017).
- Research Colloquium Talk on “*An Adaptive Multi-factor Authentication System- Design and Implementation*” at Computer Science department, Baylor University, Waco, TX (November 17, 2017).

Professional Service

1. Guest reviewer for peer-reviewed well-reputed journals
 - European Journal of Operational Research (**EJOR**) (2014-)
 - Evolutionary Computation Journal (**ECJ**) (2014-)
 - Elsevier Journal of Computers & Security (**COSE**) (2014-)
 - Information Sciences (**INS**) (2014-)
 - Soft Computing (**SOCO**) (2017-)
2. Guest reviewer of the peer-reviewed conferences
 - World Multi-Conference on Systemics, Cybernetics, and Informatics (**WMSCI**) (2015-)
 - IEEE Symposium Series on Computational Intelligence (**SSCI**) (2014-)
 - Hawaii International Conference on System Sciences (**HICSS**) (2016-)
 - IEEE **INFOCOM** (2017-)
 - IEEE International Conference on Computing, Networking, and Communications (**ICNC**) (2017-)
 - IEEE International Conference on Mobile Ad-Hoc and Sensor Systems (2017 -)
3. Member, Institute of Electrical and Electronics Engineers, Inc. (**IEEE**), 2014- present.
4. Professional Member, Association of Computing Machinery (**ACM**), 2017 – present.
5. At-Large Faculty Member of Enterprise Applications Steering committee (2018-2019), Texas A&M University-Central Texas.
6. Academic Program Review Follow-up Committee (2017), Texas A&M University-Central Texas.
7. Participated in QM Connect Conference at Fort Worth, Texas in 2017.
8. Completed the online course training on Applying the Quality Matters Rubric (APPQMR) in August 2017.
9. Participated in “*We END Violence*” workshop at Texas A&M University-Central Texas in March 2017.
10. Advising BS-CS students in their course curriculum planning from Spring 2018.