

# Abu Awal Md Shoeb

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## Research Interest

Machine Learning, Natural Language Processing, Web Mining, Information Extraction, Social Informatics

## Education

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2015 - present **Ph.D. in Computer Science**

Rutgers University, New Brunswick, NJ

Thesis: Fine-Grained Emotion Detection with Emoji

Advisor: Gerard de Melo

GPA 3.70/4.00

2013 - 2015 **M.Sc. in Computer and Information Sciences**

University of Alabama at Birmingham (UAB), Birmingham, Alabama

Advisor: Dr. Ragib Hasan

2003 - 2008 **B.Sc. Engineering in Computer Science and Engineering**

Shahjalal University of Science and Technology (SUST), Bangladesh

Thesis: Implementation of Grid Computing and its Performance Evaluation under the Alchemi Toolkit

Advisor: Khalad Hasan

GPA 3.70/4.00

## Work Experience

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2015 - present **Rutgers University, New Brunswick, NJ**

Ph.D. Student, Dept. of Computer Science

- The primary focus of my research is to extract fine-grained emotion from tweets by exploiting emojis
- Collected and compiled a unique dataset consists of 20 million tweets
- Proposed 8 basic human emotion scores for the first time for a large set of emojis

2015 - present **Douglass DIMACS Computing Corps (DDCC), Rutgers University**

Graduate Mentor

- Provide guidance and support to undergraduate women students in STEM to design and carry out fun and interactive group activities for middle school girls to discover the excitement of computing and programming

- Summer 2018 **Nokia Bell Labs, Murray Hill, NJ**  
 Summer Intern
- Designed and implemented a deep learning job scheduling algorithm under the heterogeneous system using Kubernetes.
- Summer 2017 **Nokia Bell Labs, Murray Hill, NJ**  
 Summer Intern
- Deployed highly scalable chat application under Kubernetes. The deployment includes the use of Horizontal Pod Autoscaler (HPA) and the Custom Scheduler.
- Summer 2015 **MedSnap LLC, Birmingham, Alabama**  
 Software Engineering Intern
- Enhanced the performance of a web application for medication safety and developed a visualization tool including the migration to Amazon cloud.
- 2013 – 2015 **University of Alabama at Birmingham (UAB), Birmingham, Alabama**  
 Research Assistant, SeCuRE and Trustworthy Computing Lab (SECRETLab)  
 Research Tasks:
- Spam Email Campaign Detection using Data Mining
  - Performance Analysis of Amazon EC2 Instances
  - Sockpuppet detection in Wikipedia using Machine Learning Techniques.
  - Forensics Analysis of a Hard Drive using EnCase.
- Summer 2014 **MedSnap LLC, Birmingham, Alabama**  
 Software Engineer Intern
- 2013 - 2013 **Dhaka Stock Exchange Ltd., Dhaka, Bangladesh**  
 External IT Consultant
- Member of an investigative team to identify the origin of the problem of new MSA Plus Trading software launched by Dhaka Stock Exchange Ltd.
- 2013 - present **Criss Cross Computers, Bangladesh** (<http://www.crisscrossbd.com>)  
 Founder and CEO
- Designed and implemented first e-payment system for students at SUST, a renowned public university in Bangladesh ([www.sust.edu/epayment](http://www.sust.edu/epayment))
- 2009 - 2010 **Center for Research Testing and Consultancy (CRTC), CSE, SUST**  
 Coordinator
- Designed and implemented first mobile SMS based registration system for undergraduate admission test in Bangladesh
- 2008 - 2009 **United Nations Development Programme (UNDP), Dhaka, Bangladesh**  
 e-Service Programmer, Access to Information (A2I) program, Prime Minister's Office
- Designed and implemented framework for ICT services for different ministries of Bangladesh Architectural and database design of freedom fighters web application of 1971 liberation war of Bangladesh

## Teaching Experience

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- 2015 - present **Rutgers University, New Brunswick, NJ**  
Teaching Assistant, Dept. of Computer Science  
Courses:
- CS 211 Computer Architecture (Overall student rating 4.53/5)
  - CS 314 Principles of Programming Languages (Overall student rating 4.22/5)
  - CS 214 System Programming (Overall student rating 4.25/5)
  - CS 543 Massive Data Storage and Retrieval (Overall student rating 4.09/5)
- 2009 - 2013 **Shahjalal University of Science and Technology (SUST), Bangladesh**  
Lecturer, Dept. of Computer Science and Engineering (CSE)
- CS 223 Electronic Communication (Class size 60)
  - CS 233 Object Oriented Programming Java (Class size 85)
  - CS 333 Database Management System (Class size 120)
  - CS 431 Computer Networking (Class size 75)
  - CS 445 Web Engineering (Class size 80)
- 2009 - 2013 **Center for Research Testing and Consultancy (CRTC), CSE, SUST, Bangladesh**  
Adjunct Faculty  
Courses:
- Basic Web design using CSS, HTML, JavaScript, PHP
  - Object Oriented Programming Java
  - Structured Programming Language C
- 2010-2013 **Leading University, Sylhet, Bangladesh**  
Part Time Lecturer  
Courses:
- Object Oriented Programming Java
  - Structured Programming Language C
  - Relational Database Management System
- 2011-2011 **Metropolitan University, Sylhet, Bangladesh**  
Part Time Lecturer  
Course:
- Object Oriented Programming Java

## Publications

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- **Abu Awal Md Shoeb**, Shahab Raji, Gerard de Melo, “EmoTag – Towards an Emotion-Based Analysis of Emojis”, in Proceedings of Recent Advances of Natural Language Processing (RANLP) 2019, Varna, Bulgaria
- **Abu Awal Md Shoeb**, Dibya Mukhopadhyay, Shahid Al Noor, Alan Sprague, Gary Warner, “Spam Campaign Cluster Detection Using Redirected URLs and Randomized Sub-Domains”, Social Informatics 2014, December 14-16, 2014, Cambridge, MA, USA (**Best Paper Award**)

- **Abu Awal Md Shoeb**, Ragib Hasan, Md. Haque, and Meng Hu, “A Comparative Study on I/O Performance between Compute and Storage Optimized Instances of Amazon EC2”, IEEE Cloud 2014, June 27 – July 2, 2014, Alaska, USA
- Md. Abdullah Al Mumin, **Abu Awal Md Shoeb**, Md. Reza Selim, and Muhammed Zafar Iqbal, “SUMono: A Representative Modern Bengali Corpus”, SUST Journal of Science and Technology (1682-895X), Vol. 21, No.1, 2014, P 78-86
- Sayma Sultana, Chowdhury Marium-E-Jannat, **Abu Awal Md Shoeb**, "*Performance Analysis of MPI (mpi4py) on Diskless Cluster Environment in Ubuntu*", International Journal of Computer Applications, 2012
- Md. Abdullah Al Mumin, **Abu Awal Md Shoeb**, Md. Reza Selim, and Muhammed Zafar Iqbal, “SUPara: A Balanced English-Bengali Parallel Corpus”, SUST Journal of Science and Technology (1682-895X), Vol. 16, No. 2, October 2012, P 46-51
- **Abu Awal Md. Shoeb**, “Economic benefits of SMS based Mobile Application in University Admission”, The National Conference on Contemporary Issues in Economics (NCCIE) 2011, SUST
- Sabir Ismail, Abu Fazal Md. Shumon, Altaf Hussain, **Abu Awal Md. Shoeb**, Khalad Hasan, “Effect of Homogeneous and Heterogeneous Network Structure on Alchemi Based Grid Computing Platform”, Conference on Engineering Research, Innovation and Education (CERIE) 2010, SUST
- **Abu Awal Md. Shoeb**, Altaf Hussain, Md. Abu Naser Bikas, Md. Khalad Hasan, “An Extended Algorithm to Enhance the Performance of the Gridbus Broker with Data Restoring Technique”, (IC CET 2009), ISBN 978-1-4244-3334-6, Pages 371-375
- Altaf Hussain, **Abu Awal Md. Shoeb**, Md. Abu Naser Bikas, Md. Khalad Hasan, “Runtime Thread Rescheduling: An Extended Scheduling Algorithm to Enhance the Performance of the Gridbus Broker”, (IC CIT 2008), ISBN 978-1-4244-2135-0, Pages 80-87
- Md. Abu Naser Bikas, Altaf Hussain, **Abu Awal Md. Shoeb**, Md. Khalad Hasan, Md. Forhad Rabbi, “File Based GRID Thread Implementation in the .NET-based Alchemi Framework”, (12th IEEE INMIC 2008), ISBN 978-1-4244-2823-6, Pages 468-472

## Posters

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- **Abu Awal Md Shoeb**, Shahab Raji, and Gerard de Melo, “*EmoTag: Towards Understanding the Relationship between Emoji and Hashtags in Twitter*”, Rutgers CS Conference 2017, New Brunswick, NJ
- **Abu Awal Md Shoeb**, Hafiz Imtiaz, “*Utilizing Hashtag in Opinion Mining and Sentiment Analysis for Customers Survey*”, MASC-SLL 2016, April 2016, University of Pennsylvania, PA, USA

## Technical Reports

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- **Abu Awal Md Shoeb**, “Deep Learning Job Scheduling under Kubernetes (K8) Cluster”, CS 552 Computer Networks, Rutgers University, Fall 2018
- **Abu Awal Md Shoeb** and Shahab Raji, “*Query Social Media (Twitter) with HashTag and Analyze them by using Microsoft Cognitive Services*”, CS 674 Big Data Analytics and Text Mining, Rutgers University, Spring 2017
- **Abu Awal Md Shoeb**, “*Position Paper – Is Private Browsing in Modern Web Browsers Really*”

*Private?*”, CS 553 Design of Internet Services, Rutgers University, Fall 2015

- **Abu Awal Md Shoeb**, “*Forensics Analysis of a Hard Drive using EnCase*”, CS 537 Cybercrime and Forensics, University of Alabama at Birmingham, Spring 2015

## Awards and Grants

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- Rutgers School of Arts and Sciences funding to attend Biomedical Innovation and Entrepreneurship Certificate Program in Boston, Massachusetts, November 2019
- Graduate Teaching Assistantship, Dept. of Computer Science, Rutgers University (Fall 2015 - Present)
- TA-GA Professional Development Fund, Rutgers University, Summer 2016, 2017, 2018
- Graduate Mentor, Douglass DIMACS Computing Corps, Rutgers University (November 2015 - Present)
- Best Paper Award in ASE International Conference on Social Informatics 2014, Harvard University, Cambridge, MA, USA (Dec 14-16, 2014)
- Dept. Travel Grant from University of Alabama at Birmingham to attend ASE International Conference on Social Informatics 2014, Harvard University, Cambridge, MA, USA (Dec 14-16, 2014)
- Graduate Research Assistantship, University of Alabama at Birmingham (Fall 2013 – Spring 2015)
- For Mobile SMS Based Registration System of University Admission Test
  - Emerging Young Talents (for the year 2010 by the Prothom Alo, the most popular and leading daily newspaper in Bangladesh)  
<http://archive.prothom-alo.com/detail/date/2010-04-24/news/58465>
  - mBillionth South Asian Award, July 2010,  
<http://mbillionth.in/milestones/mbillionth-2010/winners-2010/shahjalal-university-of-science-technology-sust/>
  - National e-Content Award, August 2010

## Certification

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- Biomedical Innovation and Entrepreneurship Certificate Program, IBE, Boston, Massachusetts, November 2019

## Talks

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- Pitched a business idea in Institute for Biomedical Entrepreneurship program, Boston, Massachusetts, November 2019
- Presented my research work “EmoTag – Towards an Emotion-Based Analysis of Emojis”, in RANLP Conference, September 2019, Varna, Bulgaria
- Presented my research work “Spam Campaign Cluster Detection Using Redirected URLs and Randomized Sub-Domains” in Social Informatics 2014, December 14-16, 2014, Cambridge, MA, USA  
<https://www.youtube.com/watch?v=OAHsooiDAoI>
- “Challenges of a Paperless Admission System”, SQABD Lightning Talks 4, March 2010, Dhaka, Bangladesh, <https://www.youtube.com/watch?v=d7DpWYmCIOI> or [http://www.sqabd.com/lt\\_present.php?id=lt32](http://www.sqabd.com/lt_present.php?id=lt32)

- “An Extended Algorithm to Enhance the Performance of the Gridbus Broker with Data Restoring Technique”, International Conference on Computer Engineering and Technology, Singapore 2010
- Presented a paper on “Digital Bangladesh and What to do” as a keynote speaker in a national seminar in 2009, Sylhet, Bangladesh

### **Extra-Curricular**

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- Discussion Leader, International TA Orientation, Rutgers University, Fall 2018
- President, Graduate Student Association (GSA), Rutgers University, 2016 - 17
- Elected Syndicate Member, Shahjalal University of Science and Technology, Bangladesh (2013-2017)
- Adviser, SUST Prothom-Alo Bondhushava
- Core Member, Bangladesh Open Source Network (BdOSN)
- Volunteer, Bangladesh National Mathematical Olympiad

### **Computer Skills**

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- Languages: C, Java, Python, PHP, JavaScript, MySQL, Oracle, PostgreSQL, SQLite, Scala
- Operating Systems: Windows, Macintosh, Ubuntu, Cent OS
- CMS: Joomla, WordPress
- Data Analysis Tools: JMP, WEKA, d3 JavaScript Framework, Apache Spark, Jupyter, Zeppelin
- Others: Docker, Grafana, Latex, Gitorious, Ansible, Prometheus, Amazon EC2 and S3, OpenStack, cAdvisor
- Computer Forensics Tool: EnCase
- Orchestration Framework: Kubernetes (K8)