

# MD RUHUL AMIN

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## EDUCATION

### PHD IN COMPUTER SCIENCE

*Stony Brook University, NY, USA*

*Expected Graduation: May 2019*

*Advisor: Professor Steven Skiena*

- Research Area: Deep Learning, Bioinformatics, Data Science
- PhD Thesis: Homology based Sequence Alignment and Annotation Algorithms

### MASTER OF SCIENCE IN COMPUTER SCIENCE

*Stony Brook University, NY, USA*

*Aug 2013 - May 2016*

*CGPA: 3.87/4.00*

### BSc (ENGG) IN COMPUTER SCIENCE & ENGG

*Shahjalal University of Science and Technology (SUST), Bangladesh*

*Apr 2002 - May 2007*

*CGPA: 3.96/4.00*

## EXPERIENCE

### RESEARCH SCIENTIST INTERN

*Amazon AI Algorithms, NY*

*Summer' 18 and Fall' 17*

*Mentor: Dr. Baris Coskun*

- Modeling User Behavior using the CloudTrail Traces in the AWS Environment
- CADENCE: Conditional Anomaly Detection for Events using Noise Contrastive Estimation

### RESEARCH ABROAD

*Shahjalal University of Science and Technology*

*Jan 2016 - May 2016*

*Advisor: Prof. M Zafar Iqbal*

- Bengali Word Embeddings and it's Application in Solving NLP Problems

### RESEARCH INTERN

*Laufer Center for Physical and Quantitative Biology, SBU, NY*

*May 2015 - Aug 2015*

*Advisor: Prof. Thomas MacCarthy*

- SHMPrep: Efficient Alignment and Error Correction Methods to Improve Mutation Calls in Ig Sequences

### RESEARCH INTERN

*Simons Center for Quantitative Biology, CSHL, NY*

*May 2014 - Aug 2014*

*Advisor: Prof. Michael Schatz*

- NanoBLASter: Fast Alignment Algorithms for Long and Noisy Oxford Nanopore Reads

### ASSISTANT PROFESSOR

*Computer Science & Engg, Shahjalal Uni of Science and Tech, Bangladesh*

*Jul 2009 - Jul 2013*

- Received 3 Government grants as co-investigator with Professor M. Zafar Iqbal (Total Grant: \$405,000)
- Coordinated the R&D of Center for Research, Testing and Consultancy of CSE Department

### TEAM LEADER (SOFTWARE DEVELOPMENT)

*iSearch Team, Structured Data Systems Ltd (AfriGIS BD)*

*May 2007 - Jun 2009*

*Manager: Magnus Rademeyer*

- Team Leader of Location based Information Retrieval System (live at <http://maps.afrigis.co.za>)

## PUBLICATIONS

### *Publications Related to PhD Thesis:*

- **Ruhul Amin**, Pranav Garg, Baris Coskun. "CADENCE: Conditional Anomaly Detection for Events Using Noise-Contrastive Estimation." (Submitted to IEEE Symposium on Security and Privacy, 2018.)
- Jason Jones, **Ruhul Amin**, Jessica Kim, Prof. Steven Skiena. "Stereotypical Gender Associations in Language Have Decreased Over Time." (Submitted to American Sociological Review, 2018.)
- **Ruhul Amin**, Alisa Yurovsky, Steven Skiena. "DeepAnnotator: Genome Annotation with Deep Learning." Accepted in Proceedings of the 9th ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics, 2018.
- **Ruhul Amin**, Alisa Yurovsky, Yuping Chen, Steven Skiena, Bruce Futcher. "Re-annotation of 12,495 prokaryotic 16S rRNA 3' ends and analysis of Shine-Dalgarno and anti-Shine-Dalgarno sequences." Accepted in PloS one, Volume 3, Issue 8, 2018.
- Alisa Yurovsky, **Ruhul Amin**, Yuping Chen, Steven Skiena, Bruce Futcher. "Prokaryotic coding regions have little if any specific depletion of Shine-Dalgarno motifs." Accepted in PloS one, Volume 3, Issue 8, 2018.
- **Ruhul Amin**, Steven Skiena, Michael Schatz. "NanoBLASter: Fast Alignment and Characterization of Oxford Nanopore Single Molecule Sequence Reads." Accepted in 6th International Conference on Computational Advances in Bio and medical Sciences, 2016.

### *Publications Done in Collaboration with CS Department at SUST, Bangladesh:*

- Sunny Chowdhury, KMS Islam, SN Mohammad, **Ruhul Amin**, Choudhury Wahid. “*Analysis on Lightning News and Correlation with Lightning Imaging Sensor (LIS) Data.*” Accepted in Emerging Technologies in Data Mining and Information Security, Springer, 2017.
- Noushad Sojib, Saiful Islam, MH Rupok, Sajid Hasan, **Ruhul Amin**, MZ Iqbal “*Design and Development of the social Humanoid Robot named Ribo.*” Accepted in IEEE R10-HTC 2017.
- SN Mohammad, Sakhawat Hossain, MM Rahman, Mithun Das, **Ruhul Amin**. “*Sachetan: A Crowdsourcing-Based Personal Safety Application.*” Accepted in Emerging Technologies in Data Mining and Information Security, Springer, 2017.
- Adnan Ahmad, **Ruhul Amin**. “*Bengali Word Embeddings and its Application in Solving Document Categorization Problem.*” Accepted in 19th International Conference on Computer and Information Technology, IEEE, 2016.
- A Akter, MM Islam, SI Mondal, Z Mahmud, NA Jewel, S Ferdous, **Ruhul Amin**, MM Rahman. “*Computational identification of miRNA and targets from expressed sequence tags of coffee.*” Accepted in ELSEVIER SJBS - 2014.
- **Ruhul Amin**, B Paul, FA Khan. “*Bi-lingual audio assistance supported screen reading software for the people with visual impairments.*” Accepted in 15th International Conference on Computer and Information Technology, IEEE, 2013.
- ME Rahman, R Islam, S Islam, SI Mondal, **Ruhul Amin**. “*MiRANN: A Reliable Approach for Improved Classification of Precursor MicroRNA using ANN.*” Accepted in Genomics, 2012.
- A Naser, D Aich, **Ruhul Amin**. “*Implementation of Subachan: Bengali text to Speech Synthesis Software.*” Accepted in 4th International Conference on Electrical and Computer Engineering, 2011.

### AWARDS

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- **BASIS National ICT Award 2018 from Govt of Bangladesh** for “Pipilika: Bengali Text Search Engine”
- **Best Poster Award at CEWIT 2017** for “Word Embeddings for Genome Annotation with Deep Learning.”
- **Best Poster Award at IEEE R10 HTC 2017** for “Ribo, a Social Humanoid Robot”
- **Best Poster Award at CEWIT 2015** for “Long Nanopore Reads Alignment using NanoBLASTer Algorithms.”
- **CS Department Chair Fellowship 2013** from SBU CS department for Excellence in Computer Science
- **Prime Minister’s Award 2012** for “Screen Reading Software Mongol Dip” for the Visually Impaired People.
- **mBillionth South Asia Award 2010** for “SMS based Registration and Paperless Admission System.”
- **UGC Best Student Award 2007** for achieving record CGPA from SUST CSE department.
- **University Scholarship 2003-2006** for achieving best results in every academic year from SUST.
- **Primary School Talent-pool Scholarship 1993** by UNICEF and the Government of Bangladesh.

### PROJECTS

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- **Pipilika: Bengali Text Search Engine.** Live at <http://pipilika.com>, and serve 3,000 queries/day. Funded by GPIT, Accenture and Access to Information Programme of Primer Minister’s Office in Bangladesh.
- **Ribo: A Social Humanoid Robot.** Ribo can speak, interact with humans, make facial gestures, handshake and dance. (<https://ribo.rocks/>). Funded by Science Fiction Society and Ministry of ICT in Bangladesh.
- **Mongol Dip: Bilingual Screen Reading Software for Visually Impaired People.** Used for ICT training of blind people by Visually Impaired People Society. Funded by Ministry of Science and ICT, Bangladesh.
- **Subachan: Bengali Text to Speech Synthesis Software.** This software provide text to speech services to the user of Mongol Dip. Funded by Ministry of Science and ICT, Bangladesh.
- **Cloud Platform based Digital Admission System.** Received numerous awards for minimizing digital divide. Every educational institute under Ministry of Education use similar system in Bangladesh.

### PROGRAMMING COMPETITION

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- **ACM ICPC World Finals 2012, Poland:** Participated as co-trainer of team SUST Palindrome
- **SIUPC - 2011, Sylhet, Bangladesh:** Problem setter and member of judging panel for contest
- **ACM ICPC Regional Contest (Dhaka) 2006:** Placed 5th as contestant among 90 teams

### REFERENCE

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- Prof. Steven Skiena, CS Department, Stony Brook University, NY, USA. email: [skiena@cs.sunysb.edu](mailto:skiena@cs.sunysb.edu)
- Prof. Michael Schatz, Schatz Lab, Cold Spring Harbor Lab, NY, USA. email: [mschatz@cshl.edu](mailto:mschatz@cshl.edu)
- Prof. Thomas MacCarthy, AMS Department, SBU, NY, USA. email: [thomas.maccarthy@stonybrook.edu](mailto:thomas.maccarthy@stonybrook.edu)