Sutanu Bhattacharya
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Education

Ph.D. in Computer Science and Software Engineering — Fall 2017 – Present
Auburn University, USA
Advisor: Dr. Debswapna Bhattacharya
G.P.A: 3.79

M.Tech in Distributed and Mobile Computing — June 2014
Jadavpur University, India
Advisor: Dr. Pampa Sadhukhan
C.G.P.A: 8.11

B.Tech in Information Technology — June 2011
Bengal Institute of Technology, India
C.G.P.A: 7.67

Employment

Lecturer, Computer Science Department, Chaibasa Engineering College, India, July 2014 – Aug 2017

Technical Skills

Languages known: Python, C, C++, Java, Perl, R
Operating System: Linux, Windows, Mac OS
Tools: Eclipse, NetBeans, PyMOL, vim, jGRASP

Honors and Awards

Our work has been selected for **Highlight Talk** in the 10th ACM BCB conference, Niagara Falls, NY, Sept 7-10, 2019.

Paper got published as the **Front Cover Article** in the July 2019 issue of PROTEINS: Structure, Function, and Bioinformatics journal.

Awarded **Young Research Excellence Award** (2nd place) at 16th Annual MCBIOS Conference, Birmingham, USA, 2019.

Awarded Travel grant to attend 16th Annual MCBIOS Conference, Birmingham, USA, 2019.

A.I.C.T.E. **National Scholarship** for M.Tech at Jadavpur University, Kolkata, India [2012 – 2014].

Publications

Book Chapter(s)

(8) **S. Bhattacharya,** R. Roche, M. H. Shuvo, D. Bhattacharya, "Contact-assisted threading in low-homology protein modeling", Methods in Molecular Biology by Springer Nature, 2021 (Under revision).

Journals

(7) **S. Bhattacharya,** R. Roche, M. H. Shuvo, D. Bhattacharya, "Recent advances in protein homology detection propelled by inter-residue interaction map threading", **Frontiers in Molecular Biosciences**, 2021 (Under revision). [Mini review]

(6) R. Roche, **S. Bhattacharya**, D. Bhattacharya, "Hybridized distance- and contact-based hierarchical structure modeling for folding soluble and membrane proteins", **PLOS Computational Biology, 17(2): e1008753**, (2021).

(5) A. McGehee, **S. Bhattacharya**, R. Roche, D. Bhattacharya, "PolyFold: An interactive visual simulator for distance-based protein folding", **PLoS ONE**, 15(12): e0243331 (2020). [**Best Poster Award**]

(4) **S. Bhattacharya**, R. Roche, D. Bhattacharya, "DisCovER: distance- and orientation-based covariational threading for weakly homologous proteins", **bioRxiv**, (2020).

(3) M. H. Shuvo, **S. Bhattacharya**, D. Bhattacharya, "QDeep: distance-based protein model quality estimation by residue-level ensemble error classifications using stacked deep residual neural networks", **ISMB Proceedings**, **Bioinformatics**, 36(S1): i285-i291 (2020).

(2) **S. Bhattacharya**, D. Bhattacharya, "Evaluating the significance of contact maps in low-homology protein modeling using contact-assisted threading", **Scientific Reports**, 10(1), 1-13 (2020).

(1) **S. Bhattacharya**, D. Bhattacharya, "Does inclusion of residue-residue contact information boost protein threading?", **Proteins: Structure, Function, and Bioinformatics**, 87(7): 596-606 (2019). [**Front Cover Article**], [**Highlight Talk**], [**Top Downloaded Paper** of 2018-2019 by WILEY]

Posters

S. Bhattacharya, D. Bhattacharya, "How Effective is Contact-assisted Protein Threading?", 10th ACM BCB Conference, Niagara Falls, NY, Sept 7-10, 2019.

S. Bhattacharya, D. Bhattacharya, "A new contact-assisted threading approach for predicting more accurate protein 3D structure", 2018 Graduate Engineering Research Showcase, Auburn University, USA, October 28, 2018.

Oral Presentations

S. Bhattacharya, D. Bhattacharya, "Does inclusion of residue-residue contact information boost protein threading?", 16th Annual MCBIOS Conference, Birmingham, USA, March 28-30, 2019. (**Won 2nd place in student oral presentation**).

S. Bhattacharya, D. Bhattacharya, "How Effective is Contact-assisted Protein Threading?", 10th ACM BCB Conference, Niagara Falls, NY, Sept 7-10, 2019 (**Highlight Talk**).

Teaching Experience

As a Teaching Assistant at Auburn University (August, 2017 – Summer, 2020)

1. Fundamental of Computing I: It introduces the fundamentals of computing as well as certain aspects of software engineering which will enable you to construct logical, readable, and correct programs.
2. Computational Intelligence & Adversarial Machine Learning: It introduces concepts of Evolutionary Computation, Machine learning techniques such as SVM, NN, Naïve Bayesian Classifiers, Adv Machine learning.
3. Data Structures: It is designed to introduce fundamental data structures and associated algorithms, as well as applications in which they are commonly used.

As a Lecturer (July, 2014 – August, 2017)

1. Discrete Mathematics: This course was designed for third semester C.S.E. students (U.G.) and it covers Logic, Set, Relation, Function, Induction and Recursion, Counting, Graphs, Trees.
2. Operating System: Fifth semester students of 2013-17 batch took this course in which they learnt Thread, Process Management, Memory Management, Disk Management etc.
3. Digital logic: This course covered Combinational Logic circuit as well as Sequential Logic Circuit with application and U.G. students of C.S.E. department of 2013-17 and 2014-18 batches took this course.
4. Data Structure using C: Fourth semester C.S.E. students of 2013-17 & 2014-18 batches (U.G.) took this course, where Array, linked List, Stack, Queue, Sorting and Searching, Tree, Graph are covered in C.
5. Automata: Fifth semester C.S.E. students of 2013-17 batch (U.G.) took this course where Finite automata, PDA, LBA, Turing Machine were covered.
6. Programming in Python: Almost 50 U.G. students took this course as their summer training and it covered Control flow, Function and Module, Files, Input/Output, List, Dictionary.
7. Introduction to Computing: This was an introductory course offered to freshman U.G. students.