Arinjoy Basak

http://arinjoy-basak.github.io
arinjoyb@vt.edu | 540.838.1704

EDUCATION

VIRGINIA TECH
PhD in Computer Science
Expected Spring 2021 | Blacksburg, VA
Advisor: Dr. Anil Vullikanti
Focus: Dense subgraph detection, Network Interdiction
Cum. GPA: 3.96

IIEST, SHIBPUR
BE in Computer Science and Technology
Grad. May 2016 | Howrah, West Bengal, India
Cum. GPA: 9.45 / 10.0
First Class with Honours

AFFILIATIONS

• NDSSL, Biocomplexity Institute, Virginia Tech
May 2017 - Present
• The Honor Society of Phi Kappa Phi
December 2017 - Present

SKILLS

PROGRAMMING
Over 5000 lines:
Python • Java • C • MySQL • HTML
Over 1000 lines:
Apache Spark • C++ • SchemeLISP • Prolog • LaTeX • CSS

FAMILIAR FRAMEWORKS
Apache Hadoop • Apache Hive • Matlab • Git • WEKA • Oracle 10g • PostGIS • Geographic and Census Survey datasets • PHP • JavaScript • Inkscape Vector Graphics

COURSEWORK

Data Analytics • Probability Distribution Theory • Statistical Inference • Convex Optimization • Theory of Algorithms • Numerical Analysis •Artificial Intelligence • Computer Architecture • Programming Paradigms • Theory of Computation • Operating Systems • DBMS • Digital Design

AREAS OF INTEREST

Data Science, Big Data Analytics, Machine Learning, Artificial Intelligence, Application of Analytics to Healthcare and Software Engineering

RELEVANT RESEARCH EXPERIENCE

NETWORK DYNAMICS AND SIMULATION SCIENCES LABORATORY | Graduate Research Assistant
May 2017 – Present | Virginia Tech

- Dense subgraph detection in biological networks to report functionally related gene sets.
- Developing scan statistics for graphs with uncertainty.
- Studying methods for pattern detection in opioid use (current).
- Constructing parallel/distributed algorithms for scan statistics (current).

DEPT. OF COMPUTER SCIENCE AND TECHNOLOGY | Final Year project under Dr. Asit Kr. Das
Fall 2015-Spring 2016 | IIEST Shibpur
Designed and implemented a fast Graph Based Feature Selection Algorithm Utilizing Attribute Intercorrelation.

DEPT. OF COMPUTER SCIENCE AND ENGINEERING | Ekalavya Summer Internship Programme, under Dr. Deepak B. Phatak and Ms. Sukla Nag
May 2015 – July 2015 | IIT Bombay
Proposing and creating a Video difficulty detection module for IITBombayX (based on OpenEdX InSight), and Blended MOOCs Specification and User Documentation.

R. C BOSE CENTRE FOR CRYPTOLOGY AND SECURITY | Summer Internship Programme under Dr. Bimal K. Roy, (Director, ISI) and Dr. Sushmita Ruj
May 2014 – July 2014 | ISI, Kolkata
Proposing techniques for achieving data survivability and confidentiality in unattended wireless sensor networks.

PUBLICATIONS

JMIR | Detection of spatio-temporal clusters of opioid users with network scan statistics: a multi-state analysis (in submission)
Arinjoy Basak, Jose Cadena, Achla Marathe, Anil Vullikanti

AAAI 2018 | Graph Scan Statistics with Uncertainty
Jose Cadena, Arinjoy Basak, Xinwei Deng, Anil Kumar Vullikanti

ICSB 2017 | Finding coordinated expression motifs in RNA-seq data
Arinjoy Basak, Clark Cuccinel, Alexandra Cummings, Jose Cadena, Andrew Warren, Rebecca Wattam, Allan Dickerman, Anil Vullikanti

IEEE-IEMCON 2016 | A Graph Based Feature Selection Algorithm Utilizing Attribute Intercorrelation
Arinjoy Basak, Asit Kr. Das

IEEE-AINA 2015 | Achieving Data Survivability and Confidentiality in Unattended Wireless Sensor Networks
Arpan Sen, Shrestha Ghosh, Arinjoy Basak, Harsh Parshuram Puria, Sushmita Ruj

ADDITIONAL WORK EXPERIENCE

SEALAB | Research Project under Dr. Francisco Servant
Aug 2016 – Feb 2017 | Virginia Tech
Study of change integration lengths and practices in Continuous Integration environments with a focus on Travis-CI enabled environments. Paper on work was submitted to MSR 2017 Mining Challenge.

CS 1064 - INTRO TO PYTHON, DEPT. OF COMPUTER SCIENCE, VIRGINIA TECH | Graduate Teaching Assistant
Fall 2016 – Spring 2017 | Blacksburg, VA
Conducted guest lectures for non-CS majors on utilizing Python effectively. Link: **https://youtu.be/EwseejAtoVY**

DEPT. OF COMPUTER SCIENCE AND TECHNOLOGY | Project under Dr. Asit Kr. Das and Dr. Saptarshi Ghosh
Fall 2013 - Spring 2014 | IIEST Shibpur
Reduct Extraction Algorithm using Rough Set theory, analysis of Twitter Data using the Quick Reduct Algorithm, and Development of Graph-based Dynamic Feature Extraction Algorithm.

DEPT. OF COMPUTER SCIENCE AND TECHNOLOGY | Fall Semester Project under Dr. Asit Kr. Das
Fall 2013 | IIEST Shibpur
Study of Rough Set theory and implementation of the Quick Reduct Extraction Algorithm using Rough Set theory.

AWARDS

December 2017	Inducted as member	The Honor Society of Phi Kappa Phi
October 2016	Best Paper Award	Best Paper in Data Mining, IEEE-IEMCON 2016
May 2015	Top 90 all over India	Ekalavya Summer Internship programme, IIT Bombay, supported by MHRD National Mission on Education through ICT
May 2015	Leadership position	Coordinator, IITBombayX MIS System Specification Activity
March 2014	Zonal qualifier and National Participant	Robotic Arm Event, Indo-US Robo League Aavriti 2014, EESA IIT Bombay
May 2012	Top 1% of Class XII students all over India in ISC Board Exams	DST Inspire Scholarship, awarded by Dept. of Science and Technology, Govt. of India
2008	Best Essay	9th vs. 10th Standard English Essay Competition, St. Xavier's Collegiate School, Kolkata