Biswajit Paria

4th year Undergraduate
Dept. of Computer Science and Engineering
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Education

B.Tech - M.Tech (Dual Degree) Jul 2012 - Apr 2017 (Expected)

Indian Institute of Technology Kharagpur, India
Current CGPA: **9.76**/10.00, Institute Rank: **1**

CBSE Board Senior Secondary School Examination (AISSCE) Jul 2010 - Apr 2012

Kendriya Vidyalaya IIT Kharagpur
Marks percentage: **92.4%**

CBSE Board Secondary School Examination (AISSE) Apr 2005 - Apr 2010

Kendriya Vidyalaya IIT Kharagpur
GPA: **9.8**/10.0

Internships

Computational Phenotyping using Deep Neural Networks May 2015 - Jul 2015
Guide: Dr. Yan Liu, University of Southern California

- Used Deep Neural Networks on ICU patients' data to predict health outcomes.
- Analysed features learnt by the neural network in the final hidden layer.
- Identified nodes in the neural network which cause a particular outcome.
- Attempted to learn their activations using human interpretable models such as decision trees.

Research Projects

Regularization methods for Deep Neural Networks Jul 2015 - Present
Ongoing B.Tech Thesis.
Guide: Dr. Pabitra Mitra, IIT Kharagpur

- To study current regularizers and identify their advantages and drawbacks.
- To develop regularizers as an improvement over or independent of current regularizers.

Leverage based Sampling of Matrix Rows for Scalable Empirical Risk Minimization Jan 2016 - Present
Advanced Machine Learning course project.
Guide: Dr. Sourangshu Bhattacharya, IIT Kharagpur and Dr. Anirban Dasgupta, IIT Gandhinagar

- On sampling matrix rows for scalable learning along with error guarantees.
- To build on the recent work on leverage score based sampling.

On Farey Table and its Compression for Space Optimization with Guaranteed Error Bounds
Guide: Dr. Partha Bhowmick, IIT Kharagpur May 2013 - Jul 2013

- Leveraged Number-Theoretic properties of Farey sequences to develop compression algorithms for the Farey table.
- Worked out expressions for the loss in accuracy and size of the compressed table.

Other Projects

- *A Search Engine for Mathematical Formulae,* NLP Course Project Aug 2015 - Dec 2015
  To search text and mathematical formulae in academic articles.

- *TinyC Compiler*, Compilers Course Project — Jul 2014 - Nov 2014
  A compiler for a C-like language.
- *Genetic Algorithm based Jigsaw Solver* — Jan - 2014
  A jigsaw puzzle solver for images divided into uniform sized squares and randomly shuffled.

Academic Honors and Awards

- *Charubala Devi Memorial Prize* — 2015
  Awarded for being the **best in order of merit** among all third year students.
- *Viterbi-India Scholar* — 2015
  One of the **20** scholars in India in the year of 2015.
- *Indian National Physics Olympiad (INPhO) Awardee* — 2012
  Selected among top **30** candidates in India to attend the training camp for the final stage of the Indian team selection for the International Physics Olympiad (IPhO).
- *Kishore Vaigyanik Protsahan Yojana (KVPY) Scholar* — 2011
  Scholarship sponsored by Dept. of Science and Technology, MHRD, Govt. of India.
  Secured **7th** rank in India.
- *Indian National Mathematical Olympiad (INMO) Awardee* — 2010
  Selected among top **30** candidates in India to attend the International Mathematical Olympiad Training Camp (IMOTC).
- *Australian Mathematics Competition (AMC) Gold Medallist* — 2009
  Recieved a Gold Medal in the Intermediate Division. One of the **23** other medallists in the world.

Other Honors and Awards

- *ACM ICPC 2015 & 2016 World Finalist* — 2015
  Our team BitBees qualified for the International Collegiate Programming Competition (ICPC) twice in 2015 & 2016. One of the **7** teams from India.

Programming Languages and Tools

Proficient: C, C++, Python, Java, Theano
Basic: Mathematica, Matlab, Caffe

Relevant Courses

Completed

Machine Learning, Artificial Intelligence, Matrix Algebra, Advanced Graph Theory, Computer Networks, Speech and Natural Language Processing, Parallel and Distributed Algorithms, Algorithms-I & II, Theory of Computation, Computer Organization and Architechture, Probability and Statistics, Information Retrieval, Discrete Mathematics, Operating Systems, Database Management Systems

Ongoing

Advanced Machine Learning, Operations Research, High Performance Computer Arch., Distributed Systems