Biswajit Paria

4th year Undergraduate
Dept. of Computer Science and Engineering
Indian Institute of Technology Kharagpur

biswajitsc@iitkgp.ac.in
biswajitsc@gmail.com
+91-8348949676

Education

B.Tech - M.Tech (Dual Degree)   Jul 2012 - Apr 2017 (Expected)
   Indian Institute of Technology Kharagpur, India
   CGPA: **9.72**/10.00, 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

Deep Computational Phenotyping   May 2015 - Jul 2015
Guide: Prof. Yan Liu, University of Southern California
- Used Deep Learning 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

Hierarchical Feature Learning using Deep Learning   Jul 2015 - Present
Ongoing B.Tech Thesis.
Guide: Prof. Pabitra Mitra, IIT Kharagpur
- To study the input patterns learnt by the nodes of a deep neural network.
- To devise methods for identifying feature hierarchies through statistical analysis.
- To identify sub-tasks of the original learning task.

A Search Engine for Mathematical Formulae   Jul 2015 - Present
Ongoing NLP course project.
Guide: Prof. Pawan Goyal, IIT Kharagpur
- To build a search engine capable of searching both plain text and LaTeX equations.
- To leverage natural language text in research articles for finding variable-symbol mappings.
- To develop a probabilistic model for capturing variable-symbol mappings.
- To use the probabilistic model for better ranking.

On Farey Table and its Compression for Space Optimization with Guaranteed Error Bounds
Guide: Prof. 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 and Recommendation Engine for Nikon Cameras*   Jan 2015 - Apr 2015
  Information Retrieval Course Project
  Novel idea of automatic specifications extraction from a free form text query.
- *TinyC Compiler*, Compilers Course Project   Jul 2014 - Nov 2014
  A compiler for a C-like language but with a reduced functionality.

Academic Honors and Awards

- *Charubala Devi Memorial Prize*   2015
  Awarded for being the **best in order of merit** among all third year students.
- *Jagadish Bose National Science Talent Search (JBNSTS) Scholar*   2013
  One of the **30** selected scholars in the state of West Bengal.
- *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 World Finalist*   2015
  Represented IIT Kharagpur at the world finals of the International Collegiate Programming Competition (ICPC) held in Marakkech, Morocco. One of the **7** teams from India.

Skills

Proficient: C, C++, Python, Java
Basic: Mathematica, LaTeX

Relevant Courses

Completed

Machine Learning,	Discrete Mathematics,	Probability and Statistics,
Matrix Algebra,	Algorithms-I,	Algorithms-II,
Information Retrieval,	Formal Languages and Automata Theory,	Software Engineering,
Operating Systems,	Computer Organization and Architechture,	Compilers,
Computer Networks,	Database Management Systems	

Ongoing

Artificial Intelligence,	Speech and Natural Language Processing,	Theory of Computation,
Advanced Graph Theory,	Parallel and Distributed Algorithms	