SARTHAK CHAKRABORTY

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EDUCATION

- **Dual Degree (B. Tech + M. Tech) in Computer Science and Engineering** July 2016 - ongoing
  Indian Institute of Technology Kharagpur, India
  Cumulative GPA: 9.70/10.00 (Class Rank 2)

- **Class 10+2, CISCE** April 2016
  St. Joseph's College, Kolkata, India
  Aggregate: 94.75%

- **Class 10, CISCE** April 2014
  St. Joseph's College, Kolkata, India
  Aggregate: 95%

RESEARCH

- **Unsupervised Clustering and Estimation of Model Parameters using GMM** May 2018 - Oct 2018
  Undergraduate Research Intern *Dr. Swanand Khare*
  - Designed and implemented a randomized EM algorithm to solve the unsupervised clustering problem.
  - Modelled the data using Gaussian Mixture Models to estimate its parameters by introducing randomization in between successive EM steps.
  - Synthetic as well as real data-sets were used to test the effectiveness of the algorithm against the standard approach.
  - Submitted the work for review to SDM 2019.
    https://github.com/sarthak-chakraborty/Estimation-of-Model-Parameters-using-GMM

- **Autonomous Underwater Vehicle** Mar 2017 - Feb 2018
  Research Team Member *Dr. Cheruvu Siva Kumar*
  - Worked on design changes to bring about stability in existing model of the underwater vehicle.
  - Built, developed and maintained Kraken 3.0 and performed various unit testing in practical environments.
  - TeamAUV qualified to participate in SAVe 2019, ESSO-NIOT, Chennai.

PROJECTS

- **Question Answering over Linked Data (QALD)** Aug 2018 - Ongoing
  Dr. Plaban Kumar Bhowmick
  - An attempt to translate natural language query into SPARQL query and to retrive answer from an RDF store.
  - Working on building a CRF based model for semantic relation extraction from the natural language questions.
  - Exploring various NLP based frameworks such as CoreNLP and trying to generate SPARQL query to extract answers from DBpedia by relating semantic information from the generated parse tree

- **Personal Library System** Jan 2018 - Apr 2018
  Dr. Sudip Misra
  - Developed a JAVA and SQL based Graphical User Interface to automate the proceedings of a library.
  - Incorporated features which helps the owner issue and update book information, check availability of each book, and let users borrow books.
  - The project required use of industry level software development techniques including UML.

- **Analysis of Mood Induction using Visuals** Feb 2018 - Apr 2018
  Prof Priyadarshi Patnaik
  - Studied the effect of visuals on the mood using practical experiments carried out in campus.
  - Applied survey analysis to deduce relevant points about the effect of visuals on psychology and proposed better evaluation methods for the same.

- **Image Processing Workshop** Dec 2016
  IEEE Robotics Winter Workshop
  - Successfully completed the 7 day, IEEE certified workshop in Image Processing, conducted by Technology Robotix Society, IIT Kharagpur.
  - Applied various image processing techniques using OpenCV library in C++, and implemented an algorithm to render video and show results.
  - Implemented a hand detection algorithm which would detect the moving gesture of the hand.

SCHOLASTIC ACHIEVEMENTS

- Currently hold a Department Rank of 2 in my batch of Dual degree students 2018
- Acknowledged by the Department of Computer Science for performance par excellence. 2018
- Currently among the top 1% out of 1400 students in my batch 2018
- Secured a Department change from Ocean Engineering to Computer Science and Engineering due to excellent academic records in the fresher year 2017
- Among the top 1% students in IIT-JEE (Advanced) out of 0.2 million candidates 2016
- Among the top 0.5% students in WBJEE out of 0.1 million candidates 2016

INTERESTS

Machine Learning, Statistics, Deep Learning, Natural Language Processing

SKILLS

- **Languages** Python, C, C++, Java, Verilog, MIPS
- **Packages and Frameworks** C++ STL, scikit-learn, Keras, pyTorch, Git, Javascript, JUnit, OpenCV, NLTK, SpaCy
- **Operating System** Linux, Windows

RELEVANT COURSES

- **Core Courses:**
  Programming and Data Structures#, Algorithms-I#, Discrete Structures, Formal Language and Automata Theory, Switching Ciruits and Logic Design#, Software Engineering#, Algorithms-II, Compilers#, Computer Organization and Architecture#
  [# Practicals Involved]

- **Other Courses:**
  Maths I & II, Probability and Statistics, Linear Algebra, Signals and Network, Knowledge Modelling and Semantic Technologies

EXTRA-CIRRUCULAR

- Presented a talk on 'Predictive Maintenance' at the Energy Transition Technology Summit (ETTS), 2018, held at Shell Technology Center, Bangalore. 2018
- Had been an active member of the swimming event as a part of National Sports Organisation. 2016-2018
- Completed Bhushan (3 year diploma course) and Visharad (2 year diploma course) in Fine Arts under Pracheen Kala Kendra, Chandigarh. 2008-2013