Indraneel Ghosh

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Education

2016–2021 **B.E.(Hons.) Computer Science**, *Birla Institute of Technology and Science (BITS) Pilani*, Pilani Campus, India, *CGPA 8.46/10*.

2016–2021 **M.Sc.(Hons.) Biological Sciences**, *Birla Institute of Technology and Science (BITS) Pilani*, Pilani Campus, India, *CGPA 8.46/10*.
5 Year Dual Degree Program

2013–2015 **Class 12-Maharashtra State Board**, *PACE Junior Science College*, *Percentage: 87*.
Perfect score in the course Electrical Maintenance

2003–2013 **Class 10-CBSE Board**, *Apeejay School*, Nerul, Navi Mumbai, India, *Percentage: 96.4*.

Software skills

Languages Proficient:C/C++, Java, Python
Intermediate: MATLAB/Octave, Prolog, Proteus, Assembly(MASM)
Familiar: C#, SQL, HTML/CSS,JavaScript,

Frameworks and Libraries Scikit-Learn, Numpy, OpenCV, Django, Bootstrap, jQuery, Beautiful Soup, Scrapy, Selenium, Keras, Tensorflow, NLTK

Softwares AutoCAD, Git, LaTeX, Proteus

Experience

Apr' 19 – Current **Research Intern**, *Cognitive Computing Lab*, CEERI, Pilani.
Mentor: Dr. A.S Mandal
- Worked on application Autoencoders in Manifold Learning.
- Built deep learning models using Autoencoder for pain detection from facial image dataset obtained from Carnegie Mellon University.

Dec' 18 – Sep' 19 **Undergraduate Research Assistant**, *Vector Biology Lab*, BITS Pilani.
Mentor: Prof. Sandhya Marathe
- MATLAB modelling of Hamilton's kin selection theory applied to study the tolerance of extra pair copulation. The model was built for three generations of birds.
- Objective: To publish a research paper.
- Projects funded by Science and Engineering Research Board,India.

May 18– Jul' 18 **Project SangitaNLP**, *GirlScript Summer Of Code*, India.
Mentor: Samriddhi Sinha
- Worked on developing an NLP toolkit for Indian Languages(Hindi and Bengali).
- Performed data scraping and tried to find out ways to figure compress the data available (As Github has an upper limit of 100MB.)

[Code]

May' 18–July' 18 **Summer Intern**, *CSIR IMMT*, Bhubaneshwar, India.
Mentor: Dr. Satyajit Rath

- Developed a portal on .NET Platform for automating the workflow of the organisation. Built an android application for the same.
- Tech Stack Used for building Android Application: Apache Cordova, Android Studio

[Project Report][Code]

Projects

Jan'19 – March 19 **Blood Cell Detection**, *Apogee Project Presentation*, BITS Pilani.

- Implemented a model merging CNN and RNN and compared the efficiency of the model with a model built with simply CNN for Classification of White Blood Cell Images.
- RNN and CNN implemented using Keras. To improve the efficiency of the model cuDNN was used.
- Won the award for the Best Paper at the Apogee Paper presentation Event
- Tech Stack: Python

[Code]

Apr'19-Current **Receptive Fields for Dynamic Routing in Capsule Networks**, *Research Intern*, CEERI Pilani.

- Worked on implementing and modifying the Geoffrey Hinton Paper on the same in the field.
- Implemented the paper using Receptive fields instead of the traditional Neural Network approach.

[Code]

Feb' 19 – Current **Movie Recommender Engine**, *Independent Learning Project*.

- Currently working on building a web application which asks user to rate K movies and then provides suggestions for K more movies based on his ratings.
- Scraped the data using Beautiful Soup for Top 250 IMDB Movies
- Comparative analysis of the results of Collaborative Filtering(User-User and Item-Item) and Matrix Factorization Method
- Tech Stack : Python, Javascript, HTML/CSS , Node.JS, MongoDB, Docker

[Code]

Feb' 19 – Mar' 19 **Labor Schedule Optimization**, *Apogee Innovation Challenge*, Reflexis Systems.

- Runners up in the Apogee Innovation Challenge. We pitched our solution to the Global VP of Analytics, Head of Engineering and Head of Machine Learning for the company.
- Analysing data provided by companies to predict sales and further an optimal work hours for employees so that profits are maximized.
- Implemented Models based on an integrated RNN with LSTM approach.

[Code]

Nov' 18–Dec'18 **Logic Programming**, *Course Project*, Logic in Computer Science, .
Project Mentor: Prof. Shan Balasubramaniam, Jagat Sesh Challa

- Lead a three man team to implement an automated version of the Indian Penal Code.I was responsible for writing and the preliminary debugging of the entire code. Implementation was done in Prolog. The submission was one of the top 10 submissions by a 3 man team out of 97 teams.
- Automated Indian Penal Code: On entering a set of base predicates the program can predict if an individual is guilty or not.
- Learnt about the basics of how Firewall works, in an attempt to implement the optional extension of the project.

[Code]

Jun' 18-Jul'18 **Website and Android Application Development**, *IMMT,Bhubaneshwar*, PS-1, Summer Internship.

- Website section built on .NET Platform. Database built using Microsoft SQL Server.
- Web pages created were to be hosted on the institution's LAN to streamline the workflow.
- Built an android application for the same.(Using Cordova and Android Studio)

[Project Report][Code]

Relevant Coursework

Computer Science Microprocessors and Interfacing, Data Structures and Algorithms, Object Oriented Programming, Digital Design, Computer Programming, Logic in Computer Science,Discrete Structures in Computer Science, Machine Learning**, Database Systems

Mathematics Differential Equations, Probability and Statistics,Linear Algebra,Complex Variable Calculus, Multi-variable Calculus

Biology Introduction to Bioinformatics, Biophysics, Genetics, Biochemistry, Cell Biology, Animal Physiology, Plant Physiology, Ecology, Immunology

Miscellaneous Principles of Economics,Electrical Sciences,Introduction to Corporate Finance**, Dynamics of Social Change, Popular Literature and Culture of South Asia

Note: ** refers to MOOC courses

Extra-Curriculars

Jan'16–Present **FreeLunch**, *Editor-In-Chief*, Head of Web Development.

- Chief Editor for the period March 2019 to January 2020.
- Previously Section Editor of Science and Technology
- I have written articles in wide ranging topics including the fields of Economics and Finance, Science and Technology and World Affairs.
- Responsible in negotiating agreements with Harvard Business Review Ascend to make them our Career Development Partner.
- Responsible for maintenance of the current website(Built on Wordpress) and leading a team of developers to build a new and improved website for the club.

[Website] [Code]

Jul'19 – Current **WorldQuant LLC WebSim**, *Alphas Designer*, Silver level.

- Learned to built alphas to build quantitaive financial models
- Learn the basics of quantitave financial modelling and applied my programming knowledge to build alphas.

Dec'17–May' 18 **Qrius**, *Content Writer*, Science and Technology Team.

- Responsible for writing articles covering the latest happenings and other interesting topics in the field of Science and Technology