Chirantan Ganguly

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Personal Profile

Diligent and detail oriented final year undergraduate student of ECE from the Institute of Radio Physics and Electronics, University of Calcutta. My research interests are centered around the development of intelligent IoT devices of future utilizing Artificial Intelligence at edge alongside cloud computing. I am actively looking forward to work on research projects under the able guidance of industry experts to further my knowledge and career.

Education

University of Calcutta • Kolkata, India — Aug 2019 – Present
Bachelor of Technology • *Electronics & Communication Engg.* • CGPA: 9.70/10
Rank in Department – 1

St. Thomas' Church School • Howrah, West Bengal, India — 2019
Class XII • Indian School Certificate Examination (ISC) • Percentage : 92.25%

St. Thomas' Church School • Howrah, West Bengal, India — 2017
Class X • Indian Certificate of Secondary Education (ICSE) • Percentage : 95.6%

Work Experience

Research Intern — Mar 2022 – Present
Defence Research & Development Organization (DRDO), Delhi, India

- Working on the conceptualization and development of a secure communication network between infantry soldiers and command center in combat scenarios using blockchain technology. The communication will be recorded on an immutable distributed ledger, and the communicating nodes would be held accountable for the messages sent.

Research Intern — May 2021 – Apr 2022
Centre for Development of Advanced Computing (CDAC), Pune, Maharashtra, India

- Authored two book chapters analytically reviewing the use of Deep Learning in studying the impact of the COVID-19 pandemic on physical and mental health of people.
- Represented CDAC in International Telecommunication Union (ITU) organised AI/ML in 5G challenge, where we developed methods for Indoor Localisation using Machine Learning algorithms on Received Signal Strength data from Wifi routers. The solution was awarded by the Telecommunication Technology Committee (TTC), Japan for our meticulous approach.

Research Associate – Young Scientist Program (YSP) — Jun 2021 – Sept 2021
Blue Marble Space Institute of Science (BMSIS), Seattle, Washington, USA

- Our group looked into the fundamentals of communication and information exchange from cells to animals to humans and artificial systems such as AI.
- We studied the role of communication for collective behavior and evolution of species.
- We used information theory, agent-based modeling and natural language processing to analyze datasets of gorilla calls, and communication in mycelial networks.
- I had to complete an ethics module (discussion on a topic attracting conflicting views) and a communication module (publishing articles for BMSIS and Sciworthy website) for graduating from the program.

Publications

- C. Ganguly, Sagnik Nayak and Anil Kumar Gupta, Chapter One - Mental health impact of COVID-19 and machine learning applications in combating mental disorders: a review, Artificial Intelligence, Machine Learning, and Mental Health in Pandemics, Academic Press, 2022, Pages 1-51, ISBN 9780323911962, DOI:10.1016/B978-0-323-91196-2.00016-8.
- A. Sanyal, P. Chowdhury and C. Ganguly, "IoT- based Wireless Real-time Temperature and Humidity Surveillance System for Hill Stations," 2021 4th International Conference on Recent Trends in Computer Science and Technology (ICRTCST), 2022, pp. 379-383, DOI: 10.1109/ICRTCST54752.2022.9781949.
- C. Ganguly, Sagnik Nayak, S. Irene and Anil Kumar Gupta, Sursh V., Pradeep Kumar CH "Utilizing Machine Learning algorithms for Localization using RSSI values of Wireless LAN", **accepted** for publication in the ITU Journal on Future and Evolving Technologies (JFET) Special Issue on AI and machine learning solutions in 5G and future networks (Issue No. 5)
- S. Nayak, C. Ganguly, A.K. Gupta,"A review of Machine Learning techniques to detect and treat COVID-19 using EHR data", **accepted** for publication in Artificial Intelligence and Machine Learning Methods in COVID-19, 1st Edition (Springer)

Honours and Awards

- Awarded the Summer Research Fellowship'22 as a part of the Summer Research Fellowship Program (SRFP) by the Indian Academy of Science(IASc), Indian National Science Academy (INSA) and National Academy of Science India (NASI)
- Best Paper Award issued by the Tenth International Conference on Contemporary Engineering and Technology (ICCET) for paper titled "ML assisted Localization algorithms for Indoor/Outdoor Settings: an introspection"
- First Prize Awarded for Student Lecture Competition organized by IEEE Photonics Society, Kolkata Chapter on the occasion of International Day of Light 2022
- Excellence Award for the AI/ML challenge Japan Round (Sponsored by ITU) – The Telecommunications Technology Committee, Japan

Positions of Responsibility

Core Team Member May 2020 – Jun 2021

CodeClubCU(); Technology Club of University of Calcutta (Supported by CodeChef)

- I was elected as a member of the Core Team of CodeClubCU().
- As a Core Team member, we were given the responsibility to Lead the Technology Club and successfully achieve its various objectives.
- I was able to manage a talented group of peers and lead them to achieve the clubs goals.
- We increased Code Literacy among students in Campus; Hosted various events featuring distinguished alumnus and industry leaders; Organized multiple contests to allow current members to show off their skill; We grew the chapter, and membership increased by 1.5 times.

Technical Team Lead Jun 2020 – Jan 2021

Hult Prize

- Developed Hult Prize Campus Chapter Website for University of Calcutta
- Managed other members of the Technical Team

Projects

e-Yantra Robotics Competition Mar 2021

IIT Bombay

- Programmed and simulated UR5 arms to work in fully automated warehouse scenarios
- Project Demonstration: www.youtube.com/watch?v=QIGFrAWsTJA

COVID'19 Automated Screening Machine Sept 2020

Department of Biotechnology, Ministry of Science and Technology , Govt. of India

- Developed an automated the temperature based screening device for public spaces during COVID'19 pandemic. It also has the feature to work as an automated hand sanitizer dispenser machine.
- Simulation Link: www.tinkercad.com/things/3I1yRh8UKWp

Technical & Communication Skills

- IDE: Google Colab, Anaconda, Visual Studio Code, Arduino, RStudio
- Programming Languages: Python, R, MATLAB, C/C++, LaTeX
- Softwares: MATLAB/Simulink, COMSOL, LTspice/Pspice, Gazebo, Microsoft Office
- Natural Languages: English, Bengali, Hindi

Certificates

- Machine Learning with Python - IBM
- Data Visualization with R - IBM
- ExploreML Intermediate Track - Google
- Managing Machine Learning Projects with Google Cloud - Google Cloud
- Data Science Math Skills - Duke University
- Data Science: Foundations using R Specialisation - Johns Hopkins University
- Python Intermediate Certificate - HackerRank
- VLSI System On Chip Design - Maven Silicon

Selected Coursework

Artificial Intelligence & Machine Learning, Computer System Architecture & Organisation, Advanced Programming Language, Analog & Digital Electronics, Signal Analysis & System Design, Satellite Communication, Antennas and Radio Wave Propagation for Long Distance Communication, Analog & Digital Communication, Electronic Devices