Siddhant Attavar

CS @ BITS Pilani | Rise Winner '22 | ICPC World Finals '24 | IOL '22 | APIO '22

Contact

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Personal website

⌾ Github: SiddhantAttavar

in LinkedIn: SiddhantAttavar

Stopstalk (Competitive Programming): SiddhantAttavar

Neurotechnology

Computational modelling
EEG EMG BCI
Signal Processing

Algorithms

Data structures
Graph Theory

Machine Learning

Neural networks RNNs
CNNs GANs

Programming Lanugages

Python C++ Java

Computational Biology

Network biology
Computational genomics

Summary

I am a sophomore studying Computer Science at Birla Institute of Technology and Science Pilani, Pilani Campus. I am interested in conducting research within the fields of computational biology, neurotechnology, and machine learning. I also have a keen interest in participating in various olympiads, particularly in linguistics and informatics, as well as prestigious competitive programming competitions like ICPC.

Experience

06/2024 - 10/2024

Research Intern, Indian Institute of Technology Kharagpur

Developed machine learning models in OpenViBE for motor imagery classification of EEG data

- Developed CSP spatial filters to de-noise EEG data
- Created a versatile, modular testing system for benchmarking ML models used for EEG analysis
- Designed LDA, SVM and CNN based ML models for EEG motor activity classification
- Deployed ML models in gamified VR environment for stroke rehabilitation

02/2024 - Present

Founder Neurotech Lab, BITS Pilani

Led research and outreach initiatives in the field of computational neuroscience and neurotechnology

- Using reinforcement learning algorithms for channel reduction in P300 spellers
- Created EMG based digital interface system for gaming
- Conducted workshop for 150+ students about neurotechnology and EEG signal analysis

10/2023 - Present

Undergraduate Researcher, SPARKLE, BITS Pilani

Worked on a histopathalogy based breast cancer diagnostic platform using machine learning

- Created diagnostic pipeline for benchmarking models
- Made GAN based stain-augmentation model
- Used image deconvolution to create stain-invariance system for histopathological images
- Contributed to tumour classification model that used semi-supervised learning and transfer learning

Projects

SimAID - Simulating and Analyzing Infectious Diseases ·

https://siddhantattavar.com/projects/simaid/

03/2021 - 02/2022

A novel agent-based epidemiological model to simulate and analyze intervention strategies during pandemics

- Implemented 5+ intervention strategies including vaccination, lockdown etc.
- Improved collision detection algorithm from $O(N^2)$ to $O(N\log N)$ using quad trees

SMART - Stroke Monitoring And Rehabilitation using Technology ·

https://siddhantattavar.com/projects/smart/

04/2020 - 06/2021

A technology based solution aimed at addressing the gaps in stroke rehabilitation services in India

- Developed EEG neurofeedback based stroke rehabilitation platform
- Stroke detection via machine learning algorithms

Education

Birla Institute of Technology and Science Pilani, Pilani Campus

08/2023 - 05/2027

B.E. (Hons.) Computer Science

- Vertical Lead, Postman API Lab (Neurotech, Competitive Coding, App Development)
- Coding Club (Competitive Coding)
- Google Developer Student Chapter (Competitive Coding)

- Inspired Karters Electric (designing electric vehicles for racing)
- Society for Theoretical Sciences
- Biology Association

National Public School, Indiranagar

06/2018 - 04/2023

High School Diploma

- Founder, Linguistics Club

- President, Cyber Association

Awards

Inter Collegiate Programming Competition World Finalist 2024

Inter Collegiate Programming Contest

Participated in the ICPC World Finals at Astana, Kazakhstan and secured global rank of 107 as well as an Indian rank of 7

International Linguistics Olympiad Silver Medallist 2022

International Linguistics Olympiad, Lingomann

Received a silver medal in the International Linguistics Olympiad, 2022 held in Isle of Man, UK. Came 28th out of 200+ participants. Got the highest score from India

Rise Global Winner 2022

Schmidt Futures, Rhodes Trust

Top 100 students selected to be part of the 2022 Rise Global Winner cohort out of 80,000 applicants. Rise is an initiative of Schmidt Futures and the Rhodes Trust that finds brilliant people who need opportunity and supports them for life as they work to serve others

Asia Pacific Informatics Olympiad Bronze Medallist

Asia Pacific Informatics Olympiad

Won a bronze medal in APIO with 2nd place amongst 60 Indian contestants

Asia Pacific Linguistics Olympiad Silver (2023), Bronze (2019,22) Medallist

Asia Pacific Linguistics Olympiad

Was the youngest medallist at APLO in 2019. Won 2 bronze medals in 2019 and 2022 and a silver medal in 2023 with the highest score from India

International Olympiad of Informatics Training Camp Qualifier

Indian Association for Research in Computer Science

One of the top 40 students of India to be selected for the International Olympiad of Informatics Training Camp

IRIS National Fair 2020,21,22 Finalist

Exstemplar Education Foundation; Department of Science and Technology, India · Jan 2022

Top 100 projects at IRIS Indian National Fair for my research projects: 1. SimAID - an agent-based simulation model and decision support tool for pandemics; 2. SMART: Stroke Monitoring and Rehabilitation using Technology.; 3. DriveSafe: A smartphone app to monitor reckless driving behaviours. Results: https://www.irisnationalfair.org