Abhay Kshirsagar

Curriculum Vitae

✆ *(+91) 93212 01230*
✉ *ask19ms172@iiserkol.ac.in*
🖳 *www.ak6263.github.io*
○ *Github: ak6263*
🐦 *Twitter: @KsagarAbhay*

Education

2019–Present **Indian Institute of Science Education and Research, Kolkata**,
Dept. Biological Sciences, Minor : Computer Science.
GPA – 8.73/10

Interests and Hobbies

Research Int. I am mainly interested in understanding Biological phenomena through the application of Computational techniques such as deep learning, proteomics and molecular dynamics simulations. I am also interested in Computational Structure based Drug Design.

Hobbies Origami, Programming

Projects

Nov 2021 –
Present
Exploring the the Free Energy Landscape of IDR, *Prof. Neelanjana Sengupta, IISER Kolkata, India.*
- Study the Conformational Landscape of two COVID proteins using Molecular Dynamics Simulation.
- Sample the Intermediate Rare Conformations using the latent space

Jun 2022 –
Aug 2022
NLP Researcher, *At Wavel.ai.*
Worked in the core team to learn, explore, and build state-of-the-art TTS models for multilingual and multispeaker voice cloning.

Nov 2021 –
Dec 2021
Predicting Global Horizonal Irradiance [Code ,Certificate], *Hackathon Submission.*
- Implemented Long Short Term Memory Networks on previous GHI and could cover data of a solar farm.
- Qualified To be Finalist Teams among 30 Teams

Oct 2020 –
Nov 2020
Wind Farm Layout Optimization [Code], *Hackathon Submission.*
- Implemented Particle Swarm Optimization Algorithm in Python.
- The algorithm finds the optimal wind turbine farm layout using PSO and Wind Data of a particular region.

Jun 2020 –
Nov 2020
Summer Project [Report], *Prof. Jayasri Das Sarma.*
- Studied the parallels between m-CoV and SARS-CoV-2 and how is can be used as a model organism for studying SARS-CoV-2 in mice.

Feb 2020 –
Jun 2020
Welearn Bot [Code], *Team Project.*
- A cli application for interacting with Welearn IISER-Kolkata for downloading files getting assignment deadlines
- Implemented the cache file system for the downloaded files and calendar event creation
- Implemented the google calendar integration for adding assignment and examination deadlines as an event on google calendar for those productivity.

Publications

In Review | **Conformational Ensemble of the NSP1 CTD in SARS-Cov2: Perspectives from the Free Energy Landscape**, *Under Prof. Neelanjana Sengupta, IISER Kolkata*.
In this Study we investigate the conformational ensemble of NSP1-CTD of SARS-CoV-2 virus by leveraging Enhanced Sampling Method like Replica Exchange Molecular Dynamics and gain insights on its conformational landscape by using methods such as Expectation Maximized Molecular Dynamics.

Achievements

Dec 2021 | **HPC Hackathon**, *Funding for Research*.
- Our Team won the HPC Hackathon organized by DST-India and Powered by Amazon Web Services
- We received a prize of $10,000 (USD) in compute credits by AWS for our project proposal.

Jun 2020 | **KVPY SB Scholar**, *Scholarship*.
- Qualified for a scholarship program for students interested in pursuing science
- Ranked 56

Jun 2019 | **INSPIRE Scholar**, *Scholarship*.
- Qualified for a scholarship program for students interested in pursuing science

Skills

Languages | Python, C/C++, SQL, MATLAB, R, Dart
Frameworks | Keras, PyTorch, Tensorflow
Web Dev | HTML/CSS, JavaScript (ES6)
Android Dev | Flutter
Communication | English, Hindi

Relevant Courses

Online Certifications.
- Machine Learning by Andrew Ng - [Certificate]
- Introduction Neural Networks - [Certificate]
- Convolutional Neural Networks - [Certificate]
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization - [Certificate]

Extra Curriculars

Aug 2021 | **SlashDot Club**, *Convener*.
- I was the convener of SlashDot Club which is the Coding Club of IISER Kolkata
- During my period I have taken Workshops on Web Development where I taught HTML, CSS and JavaScript.
- I was also an active member of Code Chef College chapter of IISER Kolkata

Jan 2021 | **Campus Radio**, *Web Development Team*.
- I headed the Web Development Team at Campus Radio and created website with a database Back-end
- For the Website I used tools like Firebase for storing Images, And personal Data
- I also created an app which connects to the Fire-base with CRUD functions that allows user to Modify the Data seamlessly through the GUI