Chaganti Kamaraja Siddhartha | EP20B012
Indian Institute of Technology Madras

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EDUCATION

Program	Institution	%/CGPA	Year of completion
B Tech in Physics	Indian Institute of Technology Madras, Chennai	8.99	2024
XII	MP and EV English Medium School	93.6%	2020
X	MP and EV English Medium School	90.4%	2018

SCHOLASTIC ACHIEVEMENTS

- 1166 General Rank in JEE ADVANCED 2020
- 1303 General Rank in JEE MAIN 2020
- NSEP 2019 National Top 1%
- NSEC 2018 Name listed in Above MAS students

COURSE WORK

PH1050 - Computational Physics - Teaches Mathematica
PH 1010 - Classical Mechanics
PH1020 - Electrodynamics

PH1800 - Thermodynamics
EP2110 - Introduction to Mathematical Physics
EP2102 - Classical Dynamics

LABS

- Computational Physics Lab
- Engineering Physics Lab

SKILLS

- Python
- Wolfram Language

- Basic Proficiency in C, C++, R, MATLAB, Javascript.

PROJECTS

- Monte Carlo Generators in High Energy Physics
  - Generate data of electron-proton collision events using either of the MC-generators.
  - Obtain the plots of basic parameters(for eg. energy of electron after the collision).
  - Compare the output with real experimental data (for this we will use a HEP tool, named RIVET analysis, and for ep collision, we can use the previous 1994-HERA data)
  - Explain the deviations of MC-data from experimental data, based on the patron shower models (later we could expand this to include other specifics too) used.

- Calling Wolfram Language from R
  R is an open-source programming language for statistical computing and graphics. This language is used for Data Science and Machine learning. The Wolfram Language is a general multi-paradigm programming language used for symbolic computation, functional programming, and rule-based programming. It will always be useful to get communication between these languages. R

language evaluation results can be called from Wolfram language. The goal of the project is to get Wolfram language evaluation result in an R session to make both way communication possible.

Wolfram Language code is sent from R to Wolfram language using ZeroMQ socket. Then Wolfram language evaluation result is sent to R using the same socket communication. The result is then used in R. At present, we can convert only a few data types between Wolfram Language(WL) and R, but there is the scope of extending the idea discussed here.

POSITIONS OF RESPONSIBILITY

- Project Member in Horizon Club, IIT Madras

- Member of Team Tenosrs, IIT Madras

THANK YOU