

## Proposal for Internship

Proposal for Internship under the guidance of Prof. Diptiman Saha of St. Xaviers College Calcutta. This will be an Multi-Disiplinary Internship of Mathematics and Computer Science.

The ultimate goal of the internship would be to understand key concepts regarding how numerical analysis software works under the hood and also to construct a very simple version of the numerical integration techniques used in these softwares.

The intership is expected to span a period of 6 months from September 2024 to February 2025 in offline mode.

The learning phase would involve learning about various integration methods such as trapezoidal method, simpson's rule. and their implementation in programming languages like C without any assistance from the modern numerical software or libraries. The learning phase would also include learning technologies such as construction of shared object files and position independent executables, and 3d graphics utilizing opengl.

The final project would involve create a general perspose function integrator which would allow integration of any continuous function, proper or improper. A userinterface for this integrator. And a 3d,2d function plotter to visualize the integrated functions. This software would then be used to find particular values for the gamma function in the complex domain completely showcasing the features of the integrator.