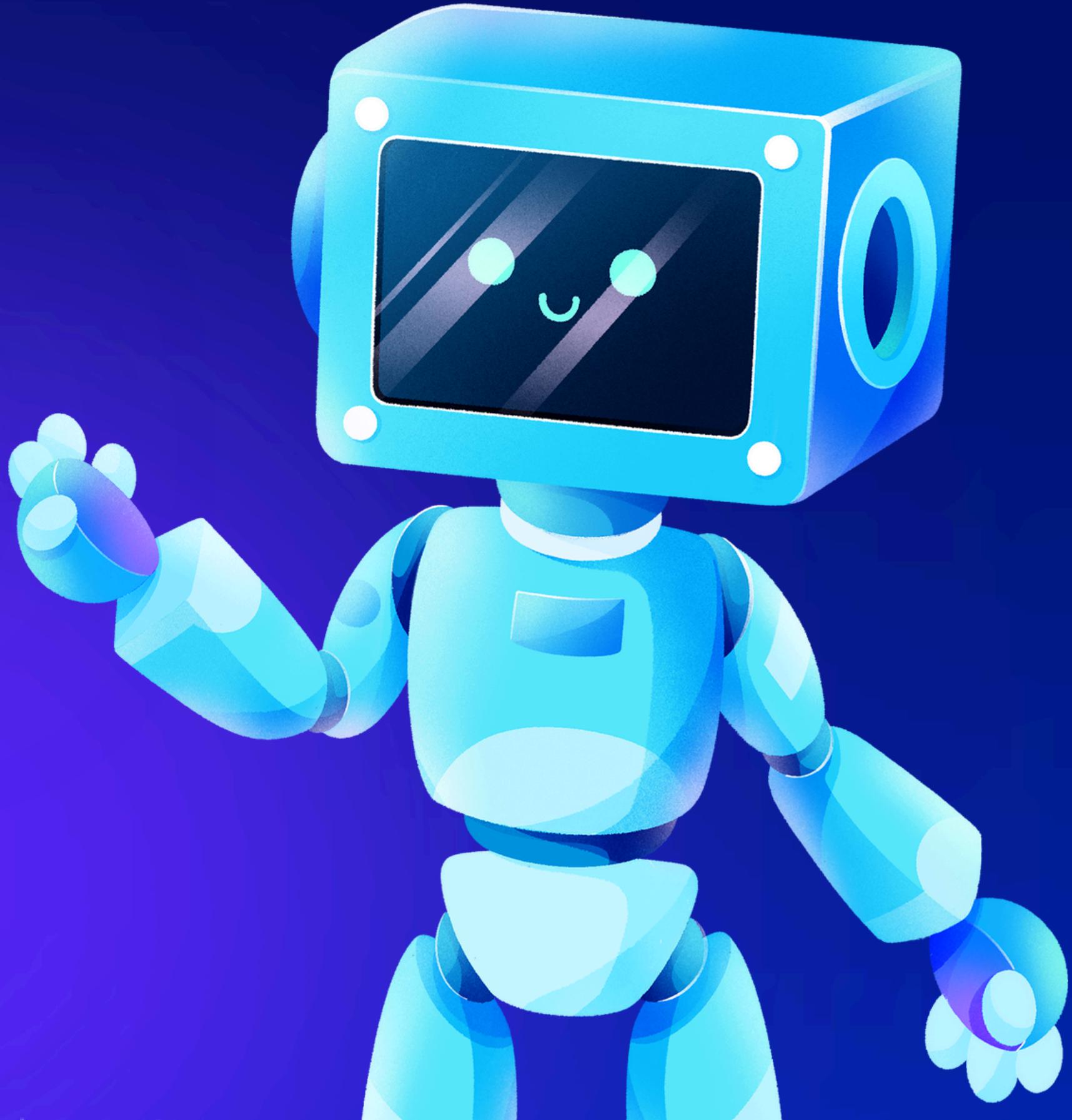


NUMERICAL COMPUTATION
NUMPY.IO

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Zainab Algelub



NUMERICAL DIFFERENTIATION

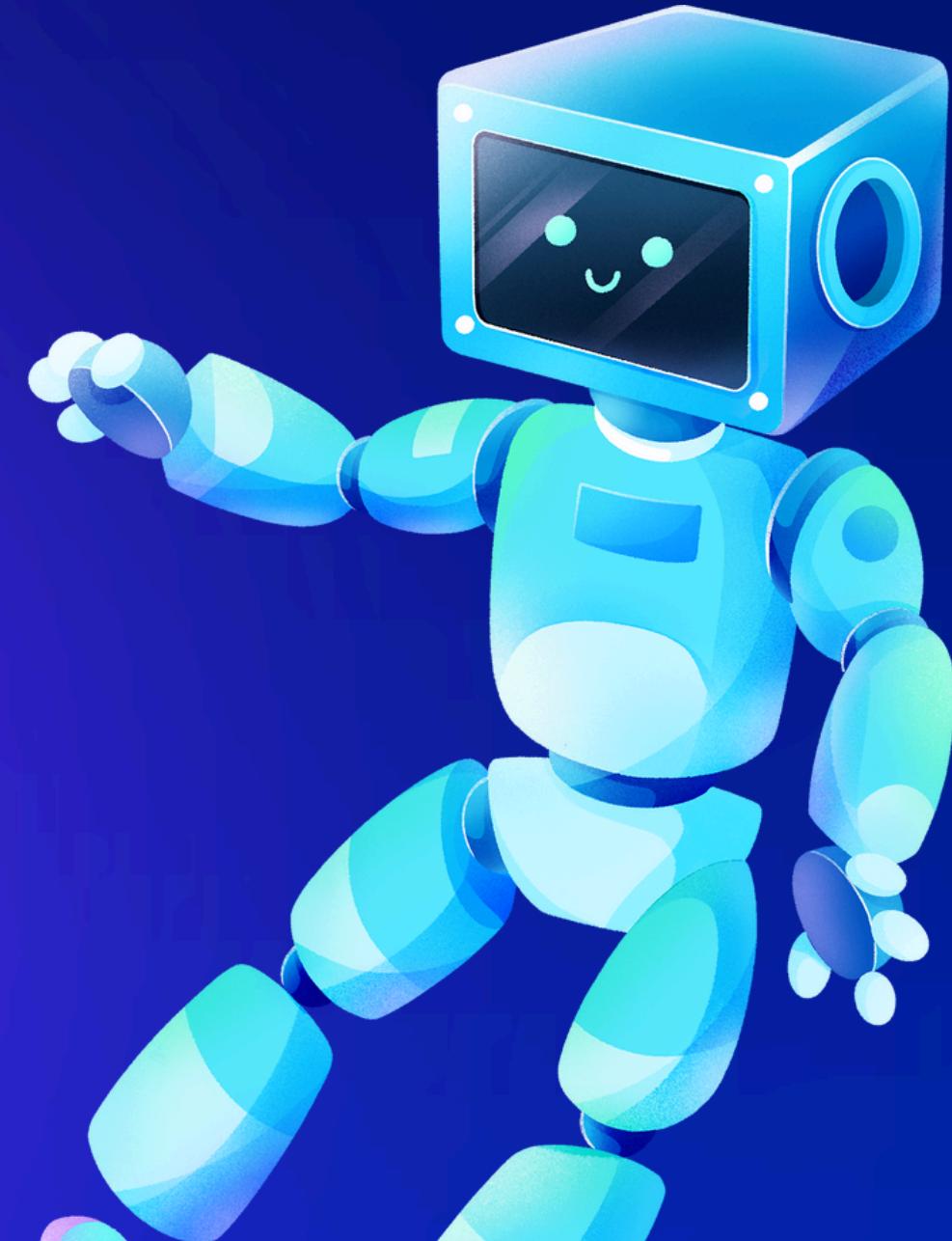
Numerical differentiation is a method for estimating the derivative of a function using discrete data points when the function is not given explicitly. In this project, we utilize three finite difference formulas: the 2-point forward difference, 3-point forward difference, and 3-point centered difference.

NUMERICAL INTEGRATION

Numerical integration is a method to estimate the area under a curve when the function is known only at certain points. This project uses two common methods: the trapezoidal rule and Simpson's rule.

GUI AND SYSTEM FUNCTIONALITY

React JS + GSAP



NUMERICAL DIFFERENTIATION METHODS

- Two-point forward difference formula
- Three-point centered difference formula
- Three-point backward difference formula

NUMERICAL INTEGRATION METHODS

- Lagrange interpolation
- Multiple applications of the trapezoidal rule
- Composite Simpson's rule

IMPLEMENTATION WORKFLOW

- STEP-BY-STEP PROCESS:
 - -USER INPUTS
 -
 - -SELECTS THE METHOD (DIFFERENTIATION OR INTEGRATION)
 -
 - -ENTERS ADDITIONAL PARAMETERS
 -
 - -RESULTS ARE CALCULATED AND DISPLAYED.



DEMO

THANK YOU!

