

# Stubh Lal

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<https://github.com/Artshouldterrify>  
<https://leetcode.com/StubhLal/>

## EDUCATION

- **Netaji Subhash University of Technology** Delhi, India  
*Bachelor of Technology - Information Technology; Current GPA: 8.84* November 2020 - 2024  
*Courses: Operating Systems, Data Structures, Analysis Of Algorithms, Artificial Intelligence, Machine Learning, Networking, Databases, Computer Networks, Software Engineering, Soft Computing, Artificial Neural Networks and Metaheuristic Algorithms.*
- **Sri Venkateshwar International School** Delhi, India  
*Student; Student Council Head- 2018-19.* 2007 - 2019

## SKILLS SUMMARY

- **Languages:** C/C++, JavaScript, SQL, HTML/HTML5, CSS, Python
- **Frameworks:** Git, React.js, MySQL, MongoDB, pandas, SKLearn
- **Soft Skills:** Communication Skills, Leadership, Public Speaking, Content Writing, Organizational Skills

## PROJECTS

- **Finding stable planetary orbits in a 2-D Solar System Simulation** May 2023  
<https://github.com/Artshouldterrify/solarSystem>
  - **Simulation:** Uses the turtle and tinkrer libraries to implement a visual, 2-D simulated animation of an arbitrary Solar System. Users can define the number and nature of bodies in this system using pre-defined classes, and observe the evolution of this system through time visually.
  - **Application:** Optimized for further operations on the model via the inclusion of helper classes that mathematically model the evolution of the system without *actually* animating it.
  - **Genetic Algorithm:** Uses the aforementioned helper classes to find stable planetary orbits within any arbitrarily set-up solar system. This is accomplished by mathematically simulating possible orbits and assigning them fitness values based on how long they avoid collisions.
  - **Visualization:** Simulates the best-fit orbits it discovered using the algorithm via the simulation module. The repository showcases such an example :<https://github.com/Artshouldterrify/solarSystem/blob/main/genetic/binary.gif>.
- **Basic Neural Networks, a Python Library (Test PyPi Link)** July 2023  
<https://github.com/Artshouldterrify/bNN>
  - **Neural Networks:** Implements 3 basic types of neural nets: **Backpropagation**, **Adaptive Linear Neurons** and **Perceptrons** from scratch.
  - **Utility:** Provides utility functions to manipulate datasets, such as for operations like normalization and transformation of output labels to output vectors. Uses vectorized implementations of matrix operations to make processing efficient.
  - **Visualization:** Leverages matplotlib to generate and represent the conceptual structure of any Neural Network defined using the library graphically, allowing for easy visualization and understanding of the machine learning process.
  - **Application:** Can be applied to any dataset for supervised machine-learning tasks such as classification. Contains utilities to both make predictions based on training data, and to test trained networks against testing datasets.
- **A Personal Portfolio Website** May 2022  
<https://github.com/Artshouldterrify/personalPortfolio>
  - **The website:** Uses HTML5, CSS and JavaScript to implement a one-page scroll personal-portfolio frontend.
  - **CSS:** Uses the Flex and Grid modules for easier management of website elements.
  - **Responsive:** Uses CSS Media Queries to adjust to device viewport size, ensuring compatibility with handheld displays.

## ACHIEVEMENTS

- **Competitive Coding:** 3 star rating on the Codechef Competitive Ladder. Peak rating of 4 stars, with an 1802 elo rating. Participation in hackathons/coding competitions such as Amazon's Hack On '23, Google Hashcode '22 and Cisco's Code-a-thon '23.
- **Debating/Public Speaking:** Participation and awards upto the national level in debating competitions in multiple formats. Participation in several international debating tournaments such as Uhuru '22 and UADC '23.
- **Leadership Skills:** Part of multiple societies and student bodies in leadership positions, across both School and College. Head of the Student Council (school), formerly an ExeComm member and currently President of the Debating Society. Centrally involved in the organization of several large-scale events including Colloquium '22 and '23, and NSMPD '22 and '23, all events with participation from 40+ colleges across Delhi with over 300 participants.

## EXPERIENCE

- **President, the Debating Society of NSUT** Delhi, India  
*Leading the society for the academic year 2022-23.* Jun 2022 - Present
- **Member, Google Developer's Students Club** Delhi, India  
*Part of the Android Development team.* Jan 2021 - 2022
- **Student Council Head, SVIS** Delhi, India  
*Lead the student council for the 2018-19 session.* 2018 - 2019