Shikhar Jaiswal

github.com/ShikharJ | jaiswalshikhar87@gmail.com
linkedin.com/in/shikhar-jaiswal-25427175 | shikharj.github.io
+91-9560266377

EDUCATION

IIT PATNA
B.Tech. in Computer Science and Engineering
2016 - Present | Patna, India
CPI: 8.47 / 10.0

TAGORE INTERNATIONAL, EOK
Intermediate/+2
May 2016| New Delhi, India
CBSE : 93.60 / 100

Matriculation
May 2014| New Delhi, India
CGPA: 10.0 / 10.0

ACCEPTED TALKS

PYCON INDIA 2017
• CAS For Different Programming Languages Using SymEngine And SymPy

SCIPY INDIA 2017
• SymEngine: Leveraging The Power Of A CAS To Another

COURSEWORK

COMPUTER SCIENCE
Programming and Data Structures + Lab
Algorithms + Lab
Switching Theory + Lab*
Innovative Design Lab*

MATHEMATICS
Linear Algebra and ODE
Real and Complex Analysis and PDE
Discrete Mathematics
Optimization Techniques*
Probability Theory and Random Processes*
(*) courses to be completed by April 2018

TECHNICAL SKILLS

PROGRAMMING
Proficiency:
C • C++ • Python • Cython
Familiarity:
JavaScript • SQL

LIBRARIES AND TOOLS
CMake • MATLAB • SymPy
GNU Octave • OpenCV
• NumPy • Git • Django

EXPERIENCE

GOOGLE SUMMER OF CODE 2017 | SymPy
May 2017 – Present | Mentors: Isuru Fernando and Sumith Kulal

- Improved overall infrastructure of *SymEngine*, a fast standalone C++ Computer Algebra System (CAS), and refactored its Python wrapper *SymEngine.py*.
- Introduced SymEngine as an optional core for *SymPy*, a popular symbolic manipulation engine in Python, and *PyDy*, a multi-body dynamics tool-kit.
- Implemented the support for Relational operators and NaN data type in SymEngine, Singleton Pattern in SymEngine.py, along with improvements to the Continuous Integration (CI), and increasing the code coverage of both the libraries.

PROJECTS

GESTURES ALIVE | Gesture Recognition Package
Autumn 2017

- Used Python libraries OpenCV and NumPy to build a gesture recognition app.
- Used web-cam to detect hand, and track its lateral movements to record gestures.

ORGAN EXCHANGE | Patient-Donor Exchange Resolver
Autumn 2017

- Developed a full stack web application using Django to allocate donor organs to patients keeping donor preference and blood group viability factors.
- Implemented a modified version of Gale-Shapley algorithm to reduce the exchange to a stable matching problem.

LET'S FOOTBALL | Design-Pattern Based Game Engine
Summer 2017

- Programmed a Football Game Engine in C++ to simulate object interactions of a football game.
- Identified and solved design problems associated with Football, Players and Team Strategy using Observer, Decorator and Strategy patterns respectively.
- Implemented RCP support for resource management and garbage collection.

ENIGMA STEGANOGRAPHER | Steganography Tool
Spring 2017

- Implemented the well known 1930 Enigma I Cipher (used by the Axis Powers in World War II) in C++.
- Enhanced capabilities by adding additional military plug-board support and increasing the number of encrypting mechanical rotors.
- Provides a total number of 11.2 sextillion different possible combinations.

HONOURS AND ACHIEVEMENTS

2016 Secured 98.71 percentile in JEE Advanced among 0.2 million candidates
2016 Secured 99.54 percentile in JEE Main among 1.2 million candidates
2016 Secured 99.13 percentile in National Entrance Screening Test (NEST) among 40,000 candidates
2016 Recipient of Kishore Vaigyanik Protsahan Yojana (KVPY) Scholarship
2013 Recipient of CBSE Award for Community Service - Human Rights and Social Equality