Rahul Venkatesh

Academic Details

Year	Degree	Institute	CGPA/Percentage
2016-2020	B.Tech in Computer Science	Indian Institute of Technology, Delhi	7.370
2016	Class XII, Karnataka State	Mother Teresa PU College, Mysuru	92.1%

Scholastic Achievements

- Selected for **ACM-ICPC** 2018 Regional Round with teams competing from all over India.
- Awarded Kishore Vaigyanik Protsahan Yojana **(KVYP) Fellowship** by Indian Institute of Science, 2015.
- Recipient of National Talent Search Examination **(NTSE) Scholarship** for being in top-1000 at National Level 2012.

Projects

1. Parallel Laplacian Solver | Prof. Amitabha Bagchi   AUG 2019
    - Implemented a **random-walk distributed** method to solve an important class of Laplacian Systems.
    - Experimented with various **optimizations** and used **Alias Method** to successfully improve performance.
    - Written and tested in C++; used OpenMP application programming interface for parallelization.

2. Public Credit Registry | Prof. Subhashis Banerjee, Prof. Subodh Sharma   MAY 2019
    - Logical representation of data privacy, security and other correctness properties in first order logic.
    - Propose a complete example of a design with unit tests and end-to-end testing of the model.
    - Design employs blockchain technology similar to **Hyperledger Fabrics** and **Software Guard Extension**

3. AI Game-playing bot | Prof. Mausam   OCT 2018
    - Created a bot to play Yinsh, a $2-$player game on an hexagonal board with a branching factor of 30.
    - Used **Alpha beta pruning** with **static move ordering** to decide next move from set of all possible moves.
    - Utilized **Bitboards** and **Zobrist Hashing** to speed up move generation, thus searching 4 moves ahead.

4. Toy prolog interpreter | Prof. Sanjiva Prasad   MAR 2018
    - Built a interpreter for logic programming language - Prolog, capable of solving prolog predicates.
    - The front end of the interpreter consitutes of the **Lex scanner** (ocamllex) and **LALR parser** (ocamlyacc).
    - The scanner converts the program into tokens which in turn are converted into **Abstract Syntax Tree**.
    - A explicit **backtracking algorithm** using fixed size stacks was implemented to solve the predicates.

Technical Skills

- Programming Languages: C/C++, Python, Java, Ocaml, Prolog, Bash, VHDL
- Tools/Software: OpenMP, MPI, Git, PyTorch, Vivado

Positions of Responsibility

- As Vice-Captain, led the hostel chess team to be placed first in Inter-Hostel Chess Tournament 2017 at IIT.
- As Captain of the Red House, ensured we stood first in the annual intra-high school extracurricular competitions.

Interests, Talents and Skills

- Chess - FIDE Rating: 1380
- Basketball - Represented the school team and currently hostel team at IIT Delhi.
- Competitive programming (uname: recurze) – Ratings: Codeforces - 1813 and Codechef - 1877.