

Rithik Sharma

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Research Interests

Programming Languages and Compilers with LLVM

Experience

LLVM - The LLVM Foundation

Google Summer of Code intern'21

May 2020 - Present

Mentor: Artem Dergachev, and Raphael Isemann (Apple)

- Clang Static Analyzer performance profiling.

LLVM - The LLVM Foundation

Google Summer of Code intern'20

May 2020 - Sep 2020

Mentor: Whitney Tsang, Bardia Mahjour and Ettore Tiotto (IBM Canada)

- Unifying code-motion checks present in loop transformation and analysis passes.

Education

Lovely Professional University (LPU)

B.Tech Computer Science and Engineering

Punjab, India
Aug 2018 - Present

St. Francis Inter College - AISSCE

PCM with PHE as the fifth subject.

Hathras, India
2016 - 2018

St. Francis Inter College - AISSE

Computer Science as the optional subject.

Hathras, India
2004 - 2016

Projects

Clang Static Analyzer performance profiling.

- While CSA is designed to be fast and lightweight, performance checks are necessary to rate it's swiftness.

Unify ways to move code or check if code is safe to be moved

- Unification of code motion checks present in loop transformation and analysis passes in LLVM

Implementing Data Flow Analysis in LLVM.

- Implementations like Live Variable Analysis.

Flexible Compiler Benchmarking Infrastructure for RISC V

- Benchmarking Infrastructure for RISC V

Pipe-lining GitHub's Travis CI to Gitlab's Yml CI using bash

- Pipe-lining custom integration for Synfig org

User Registration and Interface using python

- A user interface created using Tkinter in python to register users.

Data Storage and retrieval using data handling in C++

- Storing, retrieval, and deletion of user data using data handling in c++.

Web android browser for y2mate to download online videos using Google blockly

- A block app to download videos online.

Selected talks

R. Sharma. *Data Dependency using MSSA: Analysis and Contrast*

2020

- Poster for the annual LLVM Developer meeting

Selected Awards and Achievements

Junior Scientist Award - Indian National Science Academy

2017

Selected Summer Schools and Programs

OPLSS 2021

Oregon Programming Languages Summer School's Candidate

- Interacted with many distinguished researchers about PL and research.

June 2021

PLISS 2021

Programming Languages Implementation Summer School's Candidate

- Interacted with many distinguished researchers about PL and research.

May 2021

SURGE 2021

Students-Undergraduate Research Graduate Excellence (SURGE) program's Candidate

- An IIT Kanpur's initiative to promote research among undergrad students.

May 2021

Service

PLDI 2021

Student Volunteer

- Hosting and checking the smoothness of the conference

May 2021

ICSE 2021

Student Volunteer

- Clowdr Incharge for help and support

May 2021

POPL 2021

Student Volunteer

- Hosted rooms and monitored the events

Jan 2021

SPLASH 2020

Student Volunteer

- Hosted zoom rooms and monitored live streams

Nov 2020