

RUPANSHU SOI

Personal Website ♦ f20180294@hyderabad.bits-pilani.ac.in

EDUCATION

Birla Institute of Technology and Science, Pilani <i>Bachelor of Engineering in Computer Science</i>	2018 - 2022 CGPA: 8.96
Banyan International School, Jammu <i>Class XII, Central Board of Secondary Education</i>	2016 - 2017 92.6 %
Heritage School Jammu <i>Class X, Central Board of Secondary Education</i>	2014 - 2015 CGPA: 10

PROGRAMMING SKILLS

Languages	C, Python, Lua, Go, Scheme, Regent
Systems	Flex, Bison, Linux, React, CUDA, MySQL, L ^A T _E X

RESEARCH INTERESTS

- **Programming Languages:** Task-based programming, Implicitly parallel languages
- **Compilers:** Optimizations, Program analysis
- **High Performance Computing:** Parallel hybrid solvers

RESEARCH WORK

Development of an Implicitly Parallel Meshfree Solver in Regent	<i>Spring 2020</i>
<ul style="list-style-type: none">• Implemented a high-performance, CFD solver in the Regent programming language. [Code]• Performed rigorous performance comparisons with corresponding in-house implementations in Fortran and Julia.• Supervisor: Dr. Anil Nemili, Department of Mathematics, BITS Pilani	

REFEREED WORKSHOP ARTICLES

R. Soi, N. Mamidi, E. Slaughter, K. Prasun, A. Nemili and S. Deshpande
An Implicitly Parallel Meshfree Solver in Regent [\[Abstract\]](#)[\[Paper\]](#)
2020 IEEE/ACM 3rd Parallel Applications Workshop: Alternatives to MPI+X (PAW-ATM), USA

OPEN-SOURCE CONTRIBUTIONS

Regent (a task-based language for distributed HPC)	<i>Mar 2020 - Present</i>
<ul style="list-style-type: none">• Contributed code and reported bugs in the Regent compiler. [Pull Requests][Bug Reports]	

SELECTED PROJECTS

Runi: Hand-written lexer and parser for C in Go	<i>Spring 2021</i>
<ul style="list-style-type: none">• Implemented a lexer and recursive descent parser for a subset of C in Go from scratch. [Code]	
Misty: A Scheme Interpreter in Lua	<i>Spring 2021</i>
<ul style="list-style-type: none">• Implemented an interpreter for a subset of Scheme. [Code]	
Brendr: Efficient Borrowing-Lending for Close-Knit Communities	<i>Spring 2021</i>
<ul style="list-style-type: none">• Wrote the front-end using React and JS for a MERN stack web-app. [Code]	

TEACHING ASSISTANTSHIPS

Operating Systems	<i>Spring 2021</i>
Differential Equations (Math III)	<i>Fall 2020</i>
Mechanics, Oscillations and Waves (Phy I)	<i>Spring 2019, Fall 2019</i>

SCHOLASTIC ACHIEVEMENTS

10/10 Semester GPA	<i>Fall 2018</i>
<ul style="list-style-type: none">• Top 5 in 1100 students.	
BITS Pilani Merit Scholarship	<i>Spring, Fall 2019</i>
<ul style="list-style-type: none">• Top 1-3% of the batch.	
Sir CV Raman Prize	<i>Jan 2019</i>
<ul style="list-style-type: none">• Awarded once per semester for outstanding performance in physics.	
Joint Entrance Examination (Advanced)	<i>May 2018</i>
<ul style="list-style-type: none">• Ranked top 0.6 % in India.	

LEADERSHIP & MANAGEMENT EXPERIENCE

Ad Astra (Astronomy and Science Club)	BITS Pilani
<i>Joint Secretary</i>	<i>Aug 2019 - July 2020</i>
<ul style="list-style-type: none">• Managed and organized club activities including discussions, talks, quizzes and star-gazing sessions.• Responsible for club events during our annual technical fest, ATMOS.	

REFERENCES

- Dr. Elliott Slaughter, Computer Science Research Department, SLAC National Accelerator Laboratory, USA
- Dr. Anil Nemili, Department of Mathematics, BITS Pilani - Hyderabad Campus, India