Rupanshu Soi

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Education

2022—Now **Stanford University.** PhD in Computer Science.
Advisor: Alex Aiken.
Qualcomm Innovation Fellow 2024. Link.

2018-22 **BITS Pilani.** B.E. in Computer Science (with Distinction).
Thesis: Scaling Implicit Parallelism with Index Launches. PDF.
Advisor: Elliott Slaughter, SLAC National Accelerator Laboratory.

Experience

2024—Now **Stanford University.** Search-based optimization of ML models with equality saturation.

2023 **Stanford University.** Distributed fault resilience in the Legion programming model.

2022 **NVIDIA Graphics.** Automated generation of error-checking code in the PTXAS parser.

2021 **SLAC National Accelerator Laboratory.** Program analysis and optimizations in the Regent compiler.

2021 **Université du Québec à Montréal.** Charting LLVM using a microservice reverse-engineering approach.

2020 **BITS Pilani.** Development of an implicitly parallel meshfree solver in Regent.

Publications

2024 **Relight: Automatic, Distributed Checkpointing with Fast-Forward Replay.**
Elliott Slaughter, RS, Michael Bauer, and Alex Aiken.
In review.

2021 **Index Launches: Scalable, Flexible Representation of Parallel Task Groups.** Paper.
RS, Michael Bauer, Sean Treichler, Manolis Papadakis, Wonchan Lee, Patrick McCormick, Alex Aiken, and Elliott Slaughter.
SC 2021.

2020 **An Implicitly Parallel Meshfree Solver in Regent.** Paper.
RS, Nischay Mamidi, Elliott Slaughter, Kumar Prasun, Anil Nemili, and SM Deshpande.
PAW-ATM 2020.

Awards

2021 **MITACS Globalink Research Internship.**

2019 **BITS Pilani Merit Scholarship.** Spring, Fall 2019.

2019 **Sir CV Raman Prize.** Department of Physics, BITS Pilani.