

Sajid Ali

*PhD Candidate
Applied Physics
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Overview

- Objective** To continually enhance my expertise in computational science so as to accelerate development of reusable scientific software and maintain software infrastructure for high performance computing.
- Summary** Extensive experience in computational physics across various domains including modeling, simulations and inverse problems. Skilled in scientific software engineering and management of software stacks on clusters.

Education

- 2016–Present **Northwestern University, Evanston, IL,**
Ph.D., Applied Physics,
Computational x-ray optics, Technique development for X-ray Microscopy.
- 2011–2016 **IIT Madras, Chennai, India,**
Masters of Tech. in Microelectronics and VLSI Design Electrical Engg.,
Master's Thesis : Impurity induced magnetism in Graphene.
- 2011–2016 **IIT Madras, Chennai, India,**
Bachelors of Technology, Electrical Engg.,
Minor: Physics.

Professional Experience

- Summer 2020 **WJ Cody Associate,**
Mathematics and Computer Science Division, Argonne National Laboratory, PI: Dr Wendy Di.
◦ Improving the performance and scalability of a tomography reconstruction code written in C++/PETSc.

Research Experience

- 2018–Present **X-Ray Wave Propagation,**
X-Ray Microscopy Group, Northwestern University, PI: Prof Chris Jacobsen.
◦ Developed parallelized computer codes for large scale wave propagation.
◦ Implemented finite difference based wave propagation in PETSc.

Publications

- 2020 Comparison of distributed memory algorithms for X-ray wave propagation in inhomogeneous media **Sajid Ali**, Ming Du, Mark F. Adams, Barry Smith, and Chris Jacobsen *Optics Express* Vol. 28, Issue 20, pp. 29590-29618
- 2020 Benchmark informed software upgrades on Quest, Northwestern's HPC cluster **Sajid Ali**, Alper Kinaci, and Alexander John Mamach *In Practice and Experience in Advanced Research Computing (PEARC '20)*, Association for Computing Machinery (526–529)