

Rajeev Jain

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Experience

- CASE Staff At-Large**, The University of Chicago – Chicago IL, USA **Sept 2023 – present**
- Spearheaded collaborative research initiatives between Argonne and UChicago, enhancing institutional partnerships.
- Research Software Developer, Mathematics and Computer Science (MCS)**, Argonne National Laboratory – Chicago IL, USA **Aug 2009 – present**
- Led development on five major projects, pioneering advancements in computational science.
- Research and Teaching Assistant, Civil Engg.**, Arizona State University – Tempe, AZ, USA **Aug 2007 – July 2009**
- Engineered blast-resistant structures using FEM-based shape optimization, significantly improving safety protocols.
- Project Engineer**, Wipro Technologies – Bangalore/Hyderabad, India **May 2006 – June 2007**
- Rapidly acquired Java and SAP skills to develop robust production-ready code, becoming a key team player.

Technical Skills

Languages: Python, Fortran, C++ , Shell scripting, R, SQL, Java

Software: Visual Studio, Git, Apptainers, JIRA, Confluence, Bitbucket, Jenkins, Docker, AWS

Education

- The University of Chicago**, MS in Computer Science **June 2020**
- Coursework: Python, Databases, Networks, Algorithms, Computer Architecture, Blockchain, and Cloud Computing.
- Arizona State University**, MS in Structural Engineering (Minor in Computer Science) **July 2009**
- IIT Dhanbad, India**, BT in Mechanical Engineering **May 2006**

Major Projects

- IMPROVE/CANDLE (Cancer Data Science - fully funded ECP)** **Jan 2017 – present**
- Led the development of CANDLE/Supervisor, a scalable workflow suite for deep-learning models on DOE supercomputers, revolutionizing cancer research. Awarded the R&D 100 Award in 2023.
 - Innovated a novel approach for cancer-related gene discovery through noise injection and counterfactual analysis.
- Uxarray (Climate Computation/Modeling - DOE funded)** **June 2021 – present**
- Co-created a leading Python library, enhancing climate data analysis with 60x speedup through advanced vectorization and parallelization techniques. SciPy Conference Talk: [YouTube](#)
- FLASH-X (Multiphysics Simulation, Astrophysics - fully funded ECP)** **June 2016 – Sept 2023**
- Enhanced FLASH-X with asynchronous I/O and compression, boosting performance by over 20%. Recognized with the R&D 100 Award in 2022. HDF5 Annual Meeting Talk: [YouTube](#)
- Urban Coupled Simulations (seed funded ECP)** **June 2016 – Sept 2018**
- Directed a multidisciplinary team to develop a simulation framework, advancing urban climate modeling.
- SIGMA/MeshKit/RGG (Nuclear Reactor Simulations - DOE NEAMS funded)** **Aug 2009 – Sept 2018**
- Led development of RGG MeshKit, a groundbreaking toolkit for reactor geometry mesh generation, leading to commercialization with Kitware Inc.
 - Achieved record-breaking mesh generation, enabling complex multiphysics simulations previously deemed impossible.

Services And Awards

- Served as an editor and reviewer for a few conferences and journals. **May 2011 - present**
- Supervised several part-time summer students and full-time postdocs and staff members. **May 2011 - present**
- Interacted with high school students for the yearly "Hour of Code" event. **July 2014 - present**
- University Graduate Fellowship (ASU) - USD 4000. **July 2007 - June 2009**
- 1st Prize for Low Budget Car Design Contest, IIT Kharagpur and MINDA DELHI -INR 40k+. **Jan. 2004**
- Engineering Entrance IIT JEE All India Rank 3487. **Jul. 2002**