

RAJEEV JAIN

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SUMMARY

Hi, I work at Argonne National Laboratory in the suburbs of Chicago, I'm involved as an engineer/programmer in the [Urban Exascale Project](#), [ECP CANDLE](#) Project and the [SIGMA](#) project. I love to see things from end user perspective and engineer solutions. I have experience managing projects and personnel, most of my reports are internally submitted to Department of Energy (DOE).
Google scholar publication: <https://tinyurl.com/yd7m55rw>

EDUCATION

M.S., Structural Engineering (Simulations), School of Sustainable Engineering and Built Environment, **2009**
Arizona State University ([ASU](#)), Tempe, AZ, USA. GPA: 3.6/4.0

B.Tech, Mechanical Engineering, Department of Mechanical and Mining Machinery Engineering, **2006**
Indian Institute of Technology ([IIT-ISM](#)), Dhanbad, JH, India. GPA: 3.8/5.0

SKILLS

Languages: C++/C (advanced), Shell Scripting, Python, MPI (intermediate), Java (low)

Packages: CUBIT, Nek5000, LSDYNA, ABAQUS, FEMAP, MS Office, MS VisualStudio, QtCreator

Applications: Reactor Core Modeling, Urban Building and CFD Simulations

Domain: Geometry/Mesh Generation, Optimization, Structural Engg., CFD, Automotive Engg

RESEARCH EXPERIENCE

Software Development Specialist

Jan 2011-present

Pre-doctoral Appointee

Aug 2009-Dec 2011

Mathematics and Computer Science Department, **Argonne National Laboratory** (ANL), Chicago

- **Mar 2016-current:** Run large deep learning - cancer ensembles for hyper parameter optimization on DOE HPC machines. [GitHub Commits](#)
- **Sept 2016-current:** Urban Exascale Project: Holds bi-weekly meetings with 4 other labs, model and perform coupled atmospheric-building simulations
- **Sept 2011-Sept 2016:** **PI-MeshKit:** Created reactor models for coupled-multiphysics simulations and designed/developed Reactor Geometry (& Mesh) Generator ([RGG](#)) tool for the DOE-NEAMS (Department of Energy project Nuclear Energy Advanced Modeling and Simulation (NEAMS) program
- C++ development and mesh generation for various projects in the [SIGMA](#) group
- Collaborated with Kitware Inc. for the development of RGG GUI and [CMB](#)
- Ran large simulation (100k cores) of ALCF machines (Mira/Vesta/Blues etc.) and published the results.

Research Assistant

Jun 2007- Jul 2009

Structural and Computational Mechanics Lab., Arizona State University, Tempe

- **Thesis:** U.S. Army Research Office Project: 'Blast Mitigation Solutions via FEM-Based Design Optimization': wrote optimization code and performed parallel simulations for finding optimal shape. Advisor(s): [Dr. S.D. Rajan](#) (chair), [Dr. Gerald Farin](#) and [Dr. A.D. Belegundu](#)
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TEACHING EXPERIENCE

Teaching Assistant

Jun 2007- Jul 2009

Structural Analysis and Design, Civil Engineering Department, Arizona State University, Tempe

INDUSTRY EXPERIENCE

Project Engineer Wipro Technologies, Bangalore, India	May 2006- May 2007
Intern Engineer Engineering Research Center, Tata Motors, Pune, India	Apr 2005-Jul 2005
Intern Reliability Testing Engineer Bhilai Steel Plant, Bhilai, India	Nov 2004-Jan 2005

HONORS AND AWARDS

- Session chair, for Computational Geometries session at the at the Joint International Conference on Mathematics and Computation, Supercomputing in Nuclear Application (SNA) and the Monte Carlo (MC) Method, Nashville TN. [MC2015](#) 2015
 - [ATPESC](#) scholar world-class training for selected applicants on HPC and big data 2015
 - Co-chair, Computer Science, Argonne/CSUI Undergraduate/Graduate Research Symposium 2011
 - Best Paper in 2010 International Meshing Roundtable at Chattanooga, TN 2010
 - University Graduate Fellowship for Two Consecutive Years at ASU 2007-2009
 - Co-chair, Research in Interdisciplinary Science and Engineering (RISE), ASU 2007
 - 1st Prize in MindAdvantage Technical Paper Presentation at Minda Ltd., New Delhi 2005
 - 1st Prize for Low Budget Car Design Contest, IIT Kharagpur 2005
 - Co-char, Society of Automotive Engineering (SAE), ISM Chapter 2003-2005
 - Qualified IIT-JEE with All-India-Rank: 3487 out of 150,000 competitors (top 2%) 2002
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PROFESSIONAL ACTIVITIES

- PI MeshKit NEAMS 2011-2016
 - Supervisor – [Evan Vanderzee](#) (25%, ANL, MeshKit, triangle mesh development) 2014-2016
 - Supervisor – David Holler (Summer student, Nek5000/MOAB), Penn State University 2015
 - Supervisor – Brett Rhodes (Summer student, Reactor meshing), Edinboro University 2003
 - Member American Nuclear Society 2012-2016
 - Reviewer, SBIR (Small Business Funding Proposals) 2015
 - Reviewer, Computational Geometries, SNA and MC conference 2015-pre
 - Mentor, School kids with STEM Mentoring Cafe 2015-pre
 - Reviewer, International Meshing Roundtable 2012-pre
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FUNDING

- Urban Exascale Project – 300k, Seed project (2016-present).
- NEAMS Integration and Reactor Product Line (Meshing) – 500k+ (2011-2016)
- SBIR Funding proposal submitted - Thompson, David and Oleary, Patrick and Obara, Robert and Jain, Rajeev ‘*Open Source Integrated Design-Analysis Environment for Nuclear Energy Advanced Modeling and Simulations*’, Phase IIB, submission for topic 19. Mar, 31st, 2017.