

Krishna Kumaran

Software Engineer

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Forward-thinking Software Development Engineer working for Siemens Industries Software India, R&D center Pune. Graduated from the India's best university, IISc Bangalore and have experience working in CSIR-National Aerospace Laboratories, which is India's only R&D laboratory in civilian sector. I have proven skills in CAE/CAD PLM domain, Numerical solutions, Finite Element Analysis, data structures and algorithms, Software development, design patterns, Visualization tools and Web technologies. Looking for challenging software development roles where I could deliver my expertise and continue learning new things.



Skills

◆ C++11/14/20, Python, MATLAB	◆◆◆◆◆
◆ Datastructures and Algorithms, STL	◆◆◆◆◆
◆ Boost, Vector, Math, visualization and interactive libraries	◆◆◆◆◆
◆ FEA, Numerical Methods, Structural Vibration, Eigen Value Problems	◆◆◆◆◆
◆ Linear Algebra	◆◆◆◆◆
◆ ABAQUS, AutoCAD, Ansys, ProE, Catia	◆◆◆◆◆
◆ Multi Threading	◆◆◆◆◆
◆ QT, Web Programming, CSS, Java Script, Flask, Cmake	◆◆◆◆◆
◆ GIT, Basics of DB, Networking, OS	◆◆◆◆◆



Professional Experience

Skill Summary

Experience, Complete

- R&D academic and work experience with Abaqus, Siemens NX, Ansys, AutoCAD - CAD/CAE, Matlab - Numerical Solution, Mathematica - Analytical solution, C++, Python - Backend development with OOPS.

- Strong knowledge in Solvers of Finite Element Analysis (FEA), Composite Structural analysis with ABAQUS, Classical Laminated Plate Theory, Fracture Mechanics, Structural Vibrations, Fluid Dynamics, CAD modelling and assembly constraints.
- Extensive experience working with agile (SCRUM) backend development of CAD/CAE software product using geometric kernels.
- Familiarity in UI/UX & Virtual reality requirements of desktop application.
- Played major role in designing business requirements in coordination with PMs and held ownership of the implemented functionality.
- Experience in algorithm development for geometric applications.

**Sep 2013 -
Sep 2014**

Graduate Trainee (R&D)

National Aerospace Laboratories - CSIR , Bangalore, Karnataka

CSIR-NAL is the only government aerospace R&D laboratory in the country's civilian sector. CSIR-NAL is a high-technology oriented institution focusing on advanced disciplines in aerospace.

- I worked at Advanced Composites Division (ACD) - Damage Tolerance Lab under Senior Scientist Dr. S.R.Viswamurthi.
- I was trained to hand calculation with Classical Lamination Plate theory, FEA analysis of composite structures with ABAQUS tool.
- I took interest in creating an user interactive tool for performing analysis of multi layered composites using the Classical laminate plate theory.
- Worked on a software prototype for Strain analysis using Digital Image correlation techniques.

**Jun 2017 -
Current**

NX - Software Engineer (R&D)

Siemens Digital Industries Software, Pune, Maharashtra

NX is SIEMENS owned software, supporting every aspect of product development from conceptual design through engineering and manufacturing. NX delivers the next generation of design, simulation, and manufacturing solutions. I currently work for the Routing team of NX. Following are the projects I worked on.

- Successfully worked with the drafting team to handle refactoring tasks imposing the solid principles and understanding the framework of NX.
- Framework for NextGen Mechanical Routing UI and Ribbon state management.
- Stock and Insulation project for nextGen with enhanced UX.
- Design rule violation project external to the UI - Listener Framework.
- Framework for applying Stock/ Part applied characteristics for all components placed based on application type.
- Routing specific DCM3 constraint solving model, handling complex mathematical and business requirement solution.



Education

Jun 2015 -
Jul 2017

Master of Engineering: Aerospace Engineering

Indian Institute Of Science (IISc) - Bangalore

- I worked under Dr. Suhasini Gururaja for my final year project, titled **Micro level mechanical characterization of polymer matrix composites**.
- Graduated with [6] GPA / 8.

Jun 2009 -
Jun 2013

Bachelor of Engineering: Aerospace Engineering

K.C.G College Of Technology - Chennai

- Graduated with 8 GPA

Jan 2018 -
Jun 2019

Online Course

Geeks For Geeks

- Data Structures And Algorithms
- Design Patterns
- Competitive Programming
- Complete Modern C++ 11/14/17 By Umar Lone



Accomplishments

- GATE All India Rank-91. (2015)
- Best Performer of 2019 in NX Routing application for quick design and implementation of new features in [NX application](#).
- Most consistent performer of 2020 in the NX Routing application for my ideas on framework design.
- Key contributor in the design and implementation of new features in NX for the Hackathon.
- I am constantly code on GeeksForGeeks and InterviewBit.
- Mentored 2 new employees to bring them up to speed on projects, resulting in quicker overall completion milestones.
- I have been constantly appreciated for quick debugging skills.