Girish Arvind Katti

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QUALIFICATION SUMMARY

- **10+ years of experience in NXOpen.Net API (Application Programming Interface) and C#.Net** in creating customized knowledge based applications using design rules and NX programs using parametric, expression based and master model concept using OOPS concept and SDLC
- **10+ years of experience in NX programming** in automatic creation of 3D model and 2D drawing for complex surfacing component, Teamcenter NX integration, PMI using NXOpen.Net API and C#.Net
- **Project management** of multiple NX Customization and Mechanical Design Tool projects using agile and waterfall model.
- **Handling multiple CAD automation, Design Applications and Rulestream (ETO) projects simultaneously.**
- **Leading** 4 different sub teams with overall headcount of 24+ engineers.
- **Agile methodology -** to plan and release the product version. Scrum master for all CAD and projects.
- **Involvement in complete project life cycle** i.e. Requirement gathering, analysis, design concept, implementation, test and product release, troubleshooting and support.
- **Rich experience in interacting/communicating with international customer.**
- **Rich experience in modeling, Assembly and Drafting using NXOpen.net, UFunc and NX Customization**
- **Migration** of existing tools to latest version and development of custom dlls
- **15+ years of experience** in Design and Development, NPD using **Unigraphics NX**
- **10+ years of experience** in parametric modeling, Assembly, Drafting, Scenario for motion and GD&T using **Unigraphics NX**.
- Worked extensively in **NX** for evolution of concepts as a part of machine design and development work.
  - Automatic creation of 3D model and assembly and 2D drawing of complex surfaces.
  - Experience in surface modeling.
  - Design of special purpose, Jigs, Fixtures and gauges for product development.
  - Preparation of operation schedule and assembly flow charts.
  - Design and development of components like cams, gears and intricate parts by reverse engineering method.
  - Designing of pneumatics and hydraulics circuits for special purpose machines.
  - Designing of casting/forgings for various critical items.
  - Weight analysis of critical and intricate casting & forgings.
  - Experience in selection of materials and their equivalent as per IS, BS, Gost etc.
  - Able to work independently or lead a group of people on any projects.

SKILLS

NX | NXOpen | Ufunc | UI Block Styler | Rulestream | PMI | Teamcenter NX

C#.Net | SQL | XML | SDLC | Agile | Scrum master

Machine Design | Hydraulics | AutoCAD | Project Management

Leadership | Internal Client Interaction

CERTIFICATIONS AND TRAINING

- C#.Net, SQL, XML : NIIT, Mumbai
- Unigraphics NX : Tata Consultancy Services (TCS) Mumbai
- AutoCAD : AutoDesk Center Hyderabad at MPF Ambarnath
- AutoDesk Inventor 2008 : KLG Systel, Mumbai.
- Basic Pneumatics & Hydraulics : Foreman Training Institute, Bangalore.
- Engineers Training : Regional Training Institute, Ambarnath. (Secured 2nd Rank)

COMPUTER / PROGRAMMING LANGUAGES

Basic Computer Knowledge	Windows 10.0, MS Office, Internet.
Programming Languages	C#. Net, XML, Basic C, IDE - Visual Studio 2019
CAD Programming Languages	NXOpen.Net, Ufunc, UI Block Styler, Rulestream
RDBMS	SQL 2008
Source Control	Team Foundation Server (TFS)
CAD Software	NX, AutoCAD

ACADEMIC SUMMARY

- **Diploma in Mechanical Engg (62.82%) from Govt. Polytechnic Nasik with throughout First Class in 1995**
- **B.Tech in Mechanical Engg (69.9%) from JRN Rajasthan Vidyapeeth, Udaipur in 2007 (Distance Education)**

ACHIEVMENTS/AWARDS

- **Outstanding Performance Award in Design Stream in 2002 and 2004 at MTPF, Ambarnath**

INTERNATIONAL EXPERIENCE

- **2010 – 1 month at Sulzer Pumps (US) Inc., Brookshire, Houston, Texas, USA**
- **2011 – 2 months at Sulzer Pumps (US) Inc., Portland, Oregon, USA**
- **2013 – 4 months at Sulzer Pumps Ltd., Winterthur, Switzerland (Work Permit)**
- **2017 – 3 Weeks and 1 Week at Sulzer Pumps Ltd., Winterthur, Switzerland (Work Permit)**

PROFESSIONAL HIGHLIGHTS

1. **Company : Sulzer Tech India Pvt. Ltd, Mahape, Navi Mumbai**
   Duration : June 2007 – till date

   Company Profile :
   Sulzer Tech India Pvt Ltd. is a Global Technical Resource engaged in Design & Development of Centrifugal Pump and Pump Components. Sulzer Tech is having sophisticated design infrastructure and carry out various global projects.

   Current Designation : Manager (Team Leader)
   Roles / Responsibilities : Jan 2013 to Till date

   - Responsible for managing, developing, implementing, validating and maintaining CAD centric design automation programs, applications and processes.
   - Using agile methodology to plan and release product.
   - **Responsible for all NXOpen CAD automation projects globally.**

- Support and Part of Global team for development of new Knowledge Based Engineering and CAD based applications.
- Work in a flexible, cross functional, team based and in Global Environment
- Identify practical and innovative solutions to resolve bugs
- Responsible for work that is less defined in scope and has the understanding and experience to execute business objectives.
- Strong technical drawing interpretation skills and impart design intent
- To translate the design intent into NX Open programs
- Leader of local development team i.e. part of global team
- **Involvement in Hybrid manufacturing CAM Automation project**.

Project Undertaken

Key skills required

- NXOpen.Net API programming in NX modeling (Solid and Surfaces), assembly and drafting modules
- Expression based parametric modeling
- Surface & Interpart (WAVE) modeling
- Master model concept for drafting
- Good in Coordinate Geometry, Trigonometry, Vectors, Geometrical and dimensional Constraints
- Good analytical and information processing capacity.
- Able to executes projects independently as well as in Team
- Good working knowledge in OOPS and SDLC

1. **Project : Impeller NX Program – Windows (GUI) based**
   Role : Team Lead/Developer
   Duration : 1 Year

   Project Description :
   It generates 3D model and 2D drawing of Impeller (Radial, Semi-Axial, Axial) and Bowl automatically in Metric and Imperial units depending upon the inputs provided in User Interface. It does knowledge based check of input parametric and then creates the expression based 3D parametric model that includes complex surface modeling. After creating model, it generates 2D drawing using master model concept that includes different views, centerlines for views, dimensions with tolerances, expression based custom symbols, ballooning, and automatic filling of Title block as properties that is compatible with PDM software.

   Benefits/Achievements:
   Time taken to generate 3D model and 2D drawing is 5 minutes as compared to 20 to 24 hours that experienced engineer takes to create it manually in NX.
   Global Standardization of model and drawing is achieved.

2. **Project : Volute Design Program – Windows (GUI) based**
   Role : Developer
   Duration : 1 Year

   Project Description :
   It performs complex calculations and designs the double and single volute automatically. Custom class library is created to handle design related calculations. Third party DLLs are used to create complex geometric surfaces. Output file is geometric data file that can be read in NX customized applications.

   Benefits/Achievements:
   Time taken to design volutes is 5 to 10 minutes as compared to few days if done manually.
   Global Standardization of model and drawing is achieved.

3. **Project : Pump Configurator - Rulestream ETO**
   Role : Leader
   Duration : 1 Year

   Project Description :
   This Rulestream Engineering To Order (ETO) tool is developed to reduce time and effort of user to configure a General Arrangement model and drawing in NX. The CAD output is fully parametric in NX and can be configured using Rulestream Engineer. NXOpen DLLs are created and used in project for functionalities that aren't available in Rulestream. Guiding

   Benefits/Achievements:
   Time taken to configure the Pump GA and Baseplate 3D model and 2D drawing is 2 to 3 minutes as compared to 10+ hours if done manually or through other techniques.
   Global Standardization of model and drawing for that product is also achieved.

4. **Project : Volute NX Program – Windows (GUI) based**
   Role : Team Lead/Developer
   Duration : 6 Year

   Project Description:
   It generates parametric 3D model and complete 2D drawing (using master model concept) for Double Volute automatically in Metric and Imperial.
   After creating model, it generates 2D drawing using master model concept that includes different views, centerlines for views, dimensions with tolerances, expression based custom symbols, ballooning, and automatic filling of Title block as properties that is compatible with PDM software.

   Benefits/Achievements:
   Time taken to generate 3D model and 2D drawing is 5 minutes as compared to 20 to 24 hours that experienced engineer takes to create it manually in NX.
   Global Standardization of model and drawing is achieved.

5. **Project : DrawingStandard – NX Block Styler**
   Role : Team Lead/Developer
   Duration : 3 months

   Project Description :
   Drawing standard program creates four company specific machining element features (radii, undercut, O-ring groove and split ring groove) in NX. The feature dialog box is created using NX Block Styler. The user can input the values and makes the appropriate selection using the dialog box. Once the OK button is clicked, the program creates the parametric expression based feature as per design standard.

   Achievements :
   Time taken to generate machining feature in shaft model was reduced to less than minute as compared to 15 minutes required to manually creating the feature in NX.

6. **Project : Template Assembly – Windows (GUI) based**
   Role : Team Lead/Developer
   Duration : 6 months

   Project Description :
   Template Assembly program creates 4 different templates (Component assemblies) to inspect the profile of impeller blade. It does design check of input parametric and then creates the expression based 3D parametric part and assembly model that includes standard parts. Constraining of all assembly parts is also done automatically. After creating part and assembly model, it generates 2D drawing using master model concept that includes different views, centerlines for views, dimensions with tolerances, expression

based custom symbols, ballooning, and automatic filling of Title block as properties that is compatible with PDM software.

Achievements :
Time taken to generate 3D part and assembly model and 2D drawing is 3 minutes whereas for experienced engineer to create it manually on NX, it might take 10 hours

7. **Project : Feasibility Study - Wall Thickness of Pump Suction Casing**
   Role : Team Lead/Developer
   Duration : 6 months

Project Description :
This program takes suction model as input and creates the wall thickness around the surfaces to create the solid body that is used for casting purpose. Input model consists of 5 non planar surfaces. It offset the each surface maintaining G1 tangency between the surfaces. After the offset tangent surfaces are create, it again uses the geometrically creates the single surface required for solid body creation.
Achievements :
Time taken to generate this complex 3D surface model is 3 minutes as compared to 16 hours that experienced engineer takes to create it manually in NX

8. **Project : Volute Template Expression Creator – Windows (GUI) based**
   Role : Developer
   Duration : 6 months

Project Description:
Volute Template Expression Creator program does knowledge base check as per design intent and then creates expression file after that can be directly loaded in NX. Expressions in 3D model file are updated with new value from the expression file. 3D model and 2D drawing is automatically updated with the new values.

Achievements:
Expression file is created in less than a minute and time taken to update 3D model and 2D drawing with new values created using this program is 1 - 2 minutes whereas it might take 1-2 hours if done by changing each expression values manually

9. **Project : Profile Generation method**
   Role : Developer
   Duration : 3 months

Project Description:
Method creation to generate the profile points of the impeller blade developed length using Linear, Elliptical and Spline equation outside the NX environment as DLL file and then using the points to generates expression based sketch in NX.

Achievements:
Time taken to generate points is less than a minute whereas it might take more than an hour if done manually.

10. **Project : Custom Library**
    Role : Team Lead and Developer
    Duration : 3 months

Project Description :
Customized dynamic linked library is created that is used in all NX programs.

Achievements :

Avoids duplication and better to maintain NX programs while upgrading to newer NX version

Designation : Assistant Manager - ORE
Roles / Responsibilities : June 2007 to Dec 2012

- To prepare design study, do calculations using excel sheet and to create component drawing and BOM for vertical pumps
- To prepare customer facing document like General Arrangement, Piping drawing with BOM, Lube Oil piping drawing for Horizontal pumps.
- To create/maintain global standard part library in Inventor required for Pump components and accessories.

Project: Worked on ORE project of all major global customer of Sulzer Pumps (US) Inc.

2. **Company : Machine Tool Prototype Factory, Ambarnath, Thane**
   Duration : Feb '98 – Jun '07
   Designation : Design Engineer (Chargeman Gr-I/T)

   Company Profile :
   MPF is a modern engineering industry with ISO: 9001 under Ordnance Factory, Ministry of Defence, Govt of India. MPF is having sophisticated design infrastructure and equipped with modern tool room, modern CNC machining centers, gear cutting machines and checking facilities like Co-ordinate Measuring Machine (CMM).

   Roles / Responsibilities

   - Design and development of different special purpose machines, machine components, preparing layout, part drawing etc.
   - Solid and Assembly modeling of machine components using Unigraphics NX.
   - Drafting, Scenario for motion and GD&T using Unigraphics NX.
   - Preparation of assembly and part drawing, part list, bill of material etc.
   - Design and development of Jigs, Fixtures and gauges to provide an aid to streamline manufacturing and increase productivity.
   - Designing of pneumatics and hydraulics circuits for special purpose machines.
   - Design of worn-out parts like gears, cams, pulleys, shafts and machine elements for overhauling.
   - Designing of casting/forging for various critical items.
   - Bearing and material selection.
   - Weight analysis of critical and intricate casting & forgings.

Project Undertaken

Crimping and Extracting Machine

Project : Crimping and Extracting Machine
Client : Proof & Experimental Establishment, DRDO, Balasore, Orissa
Role : Design Engineer

Key skills required

- CAD modeling, assembly, drafting, GD&T
- Design of machine elements i.e. shafts, key, pulley
- Materials
- Mechanisms
- Machining Processes

- Hydraulics

Project Description: Hydraulic Crimping & Extracting machine is designed to crimp and pull off different types of ammunition one at a time. Different calibers can be crimped & extracted by using suitable arrangement. Crimping and extracting can be done at desired force with the help of hydraulic power pack and microprocessor based electronic circuits.

Burnishing Machine

Project : Burnishing Machine
Client : Rifle Factory Ishapore Calcutta, Small Arms Factory Kanpur, Ordnance Factory Trichy
Role : Design Engineer

Key skills required

- Design of machine elements i.e. shafts, key, pulley, flywheel
- CAD modeling, assembly, drafting, GD&T
- Materials, bearing selection
- Mechanisms
- Machining Processes
- Electric motor selection, calculations of torque.

Project Description: Burnishing machine is a mechanical machine designed for burnishing barrel bore of rifle of different calibers. Burnishing is done in clockwise and anticlockwise direction with the help of spur gears arrangement. Two barrels can be burnished at a time and machine is operated continuously for 8-hour/shift without maintenance problem.

3. **Company : United Heat Transfer Pvt. Ltd., Nasik**
   Duration : Jan '97 – Feb '98
   Designation : Engineer

   Company Profile :
   United Heat Transfer Pvt. Ltd. is a small scale industry expertise in designing and developing pressure vessels, heat exchanger, radiators etc having customer such as Chicago Pneumatics, Carbon Everflow, ABB, Pharmaceutical companies.

   Roles / Responsibilities

   - ➔ Design and development of pressure vessels, heat exchangers, radiators etc using AutoCAD.
   - ➔ Preparation of assembly and part drawing, part list, bill of material etc.
   - ➔ Designing of tube sheet layout for easy manufacturing of tube sheet.
   - ➔ Weight analysis.

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4. **Company : Hindustan Aeronautics Ltd., Nasik**
   Duration : Nov '95 – Oct '96
   Designation : Diploma Apprentice

   Company Profile :
   Hindustan Aeronautics Ltd. is one of sophisticated aircraft manufacturing company in India, under Govt. of India undertaking, ministry of defence. HAL is having advanced and sophisticated design infrastructure and well-equipped modern tool room, CNC machines, heat treatment facility, large sheet metal shop, good overhauling capacity and latest measuring machines.

   Roles / Responsibilities

   - ➔ Preparation of drawing of aircraft wing components on AutoCAD.

- Preparation of assembly and part drawing, part list, bill of material, operation schedule etc.
- Designing of Jigs/Fixtures.
- Designing of canopy lock assembly with the help of Russian official as per Gost standard.
- Weight Analysis of casting/forgings.

Personal Details:

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