Rahul Jukanti

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SUMMARY

Experienced **CAD Application Programmer** with over 3 years of expertise in automating design processes using **NX Open (C#)**. Skilled in understanding client requirements and delivering reliable, user-friendly automation solutions that improve design accuracy and reduce manual effort.

TECHNICAL SPECIALIZATIONS

- **CAD API Development:** Expert in **NX Open**, **UFUNC API**, and **.NET** integration for Siemens NX.
- **Automated Workflows:** Specializing in **Drafting Automation**, **Assembly Automation**, and **Geometric Design Validation**.
- **UI/UX Customization:** Proficient in building intuitive interfaces using **Block Styler UI** and **WinForms**.
- **Data Integration:** Advanced capability in linking CAD environments with external data sources like **Microsoft Excel** and **HTML** reporting.

WORK EXPERIENCE

Application Programmer Apr 2023 – Present
CITIUS SOLUTIONS PVT LTD. Hyderabad, India

PROJECTS

Drafting Automation for Centrifugal Fans (Reitz India)
Tools: NX (v2412), NX Open, C#, Block Styler UI

- **Automated Drafting sheet population**, dynamically generating specific views and annotations directly from **3D model data**.
- **Automated drawing creation utility** that interprets complex 3D model data to automatically generate comprehensive engineering drawings.
- This included **defining and populating specific drawing views** (e.g., front, top, side, isometric, sectional, Detail), applying dimensions, callouts, and other critical annotations based on **model properties and user-defined rules**.

Custom NX Drafting Standards Tool (Drafting QC Tool)
Tools: NX (v2206), NX Open, C#, Block Styler UI

- Developed a custom Siemens NX tool with an **admin panel** to define and manage company-wide **drafting standards**, including text size, fonts, and note formatting.
- **Automated the application of these standards** across all active drafting sheets in the NX workspace, ensuring consistency and reducing manual effort.
- Enhanced **drafting efficiency and compliance** by centralizing control of drawing preferences and minimizing errors.

Excel-Driven Assembly Automation Tool
Tools: NX (v2206), NX Open, C#, Block Styler UI, Microsoft Excel

- Developed a custom Siemens NX automation tool to **import component data from Excel**, including coordinates, orientation, and part names.
- **Automated the placement of standard components** (bolts, nuts, screws, weld guns, etc.) in the NX assembly based on the input data.
- Reduced **manual modeling effort** and improved accuracy and efficiency in component positioning through **data-driven automation**.

Automated Design Validation Tool

Tools: NX (v2206), NX Open, C#, Block Styler UI, HTML

- Engineered a Script that automatically scans the active workspace for **geometric interferences, tolerance deviations, and outdated drawing views**, leveraging the native NX UI to highlight errors in real-time.
- Utilizing the **NX Open API** and a dedicated admin panel to programmatically **enforce engineering standards** across 3D models, sheet metal, and 2D drafting.
- **Automated quality assurance reporting** by generating detailed **HTML summaries** that document pass/fail statuses and pinpoint specific non-compliant features.

3D Model Comparison Tool

Tools: NX (v1847), NX Open, C#, Block Styler UI

- Developed an **automated model comparison utility** using the NX Open API to verify CAD file versions and ensure engineering teams are working with the most up-to-date design iterations.
- Engineered a **comparison algorithm** that programmatically evaluates both **3D model geometry and internal part attributes** to instantly detect modifications.
- Provided **inbuilt user interface** to highlight all the changes found comparing both models.

Additional Utilities

- **View Beautification Tool:** Developed a script to **rearrange dimensions, notes, labels, and callouts** in a drawing view.
- **Mid Surface Creation Tool:** Developed a custom script to efficiently **generate accurate midsurfaces** for analysis.
- **3D to 2D Attribute Validation Tool:** Automated validation to compare part tables on 2D drafting sheets against **3D model attributes**.
- **Raw Material Estimate Tool:** Detects **raw material requirements** and generates detailed Excel reports for assemblies.

EDUCATION

Bachelors of Technology | Mechanical Engineering Graduated 2022
St. Peters Engineering College, Hyderabad

LANGUAGES

English, Hindi, Telugu