**SolidWorks DFM Plug-In and SculptPrint Feedback Application**

**Making machining knowledge more accessible to novice designers**

1. Overview

SongTelenkoDFM is a custom plug-in for SolidWorks. The plug-in was written in Visual C# language inside of the Microsoft Visual Studio integrated development environment (IDE). The plug-in was written using the official SolidWorks application programming interface (API) and using a custom, easy-to-use SolidWorks SDK designed by Luke Malpass (<https://github.com/angelsix>, <https://www.angelsix.com/>). The plug-in itself is compiled into a dynamic-link library, or DLL (a file with a .dll extension). This DLL is loaded by SolidWorks on startup, after which the user has the option to interact with the custom software.

The layout of the plug-in was written in the Extensible Application Markup Language (XAML) which is loosely similar to the common Hypertext Markup Language (HTML). The plug-in contains one XAML file (with the extension .xaml) which describes the layout of buttons and text within the user interface (UI). The XAML file makes use of the Windows Presentation Foundation, and the plug-in requires that at least .NET Framework 4.7.1 be installed. This is a key dependency, and is the reason that the plug in “looks and feels” like the Windows UI.

This project was written for Ruoyu Song, a Ph.D. student of Dr. Cassandra Telenko’s Computational and Advancement of Sustainable Systems Lab. This project’s files are hosted on GitHub (<https://github.com/amarellapudi/Solidworks-DFM-PlugIn>). The following documentation details the project installation procedure, general usage and functionality, and procedures for customizing and extending the functionality of the current code.

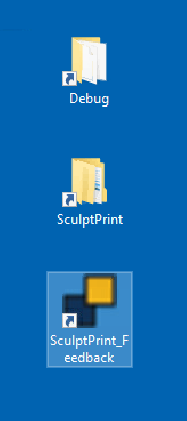
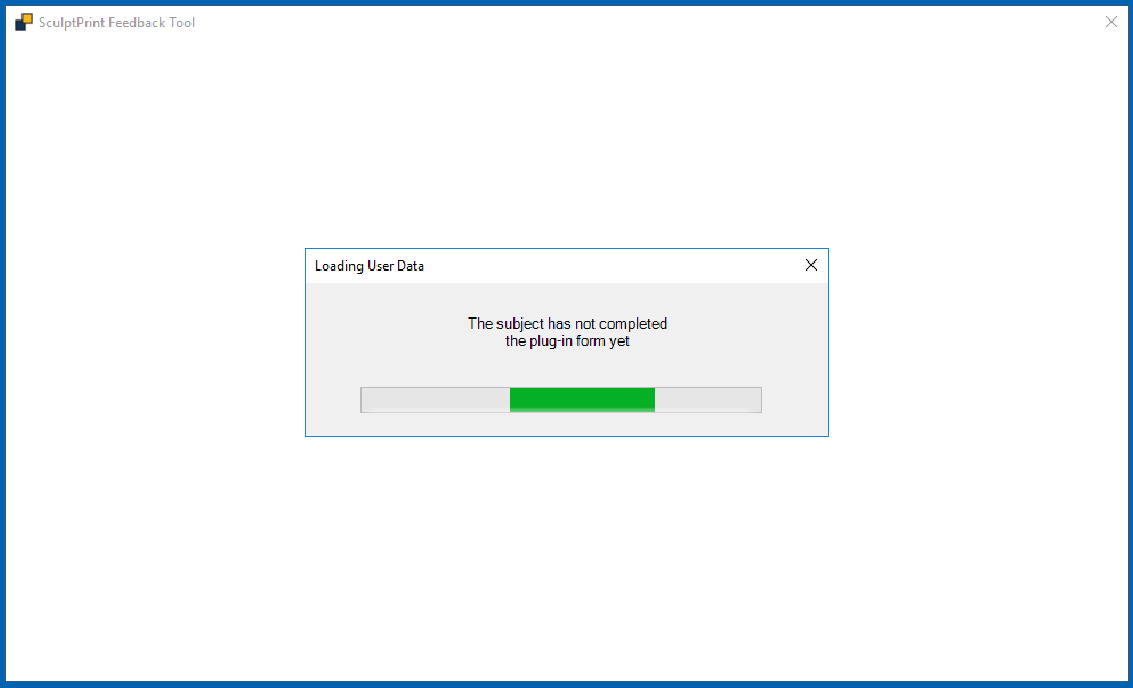
2. Installation

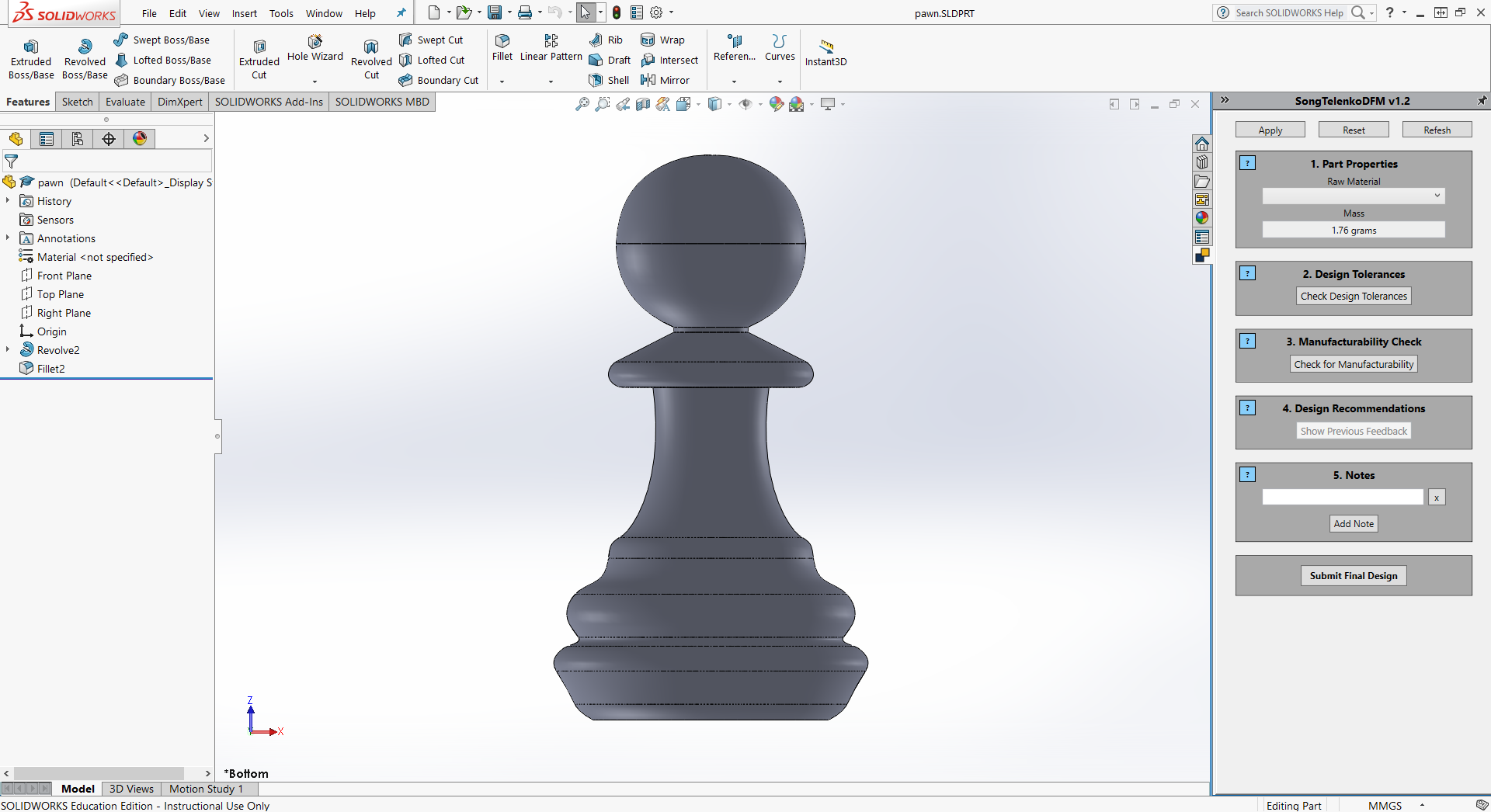
2a. SolidWorks Plug-In

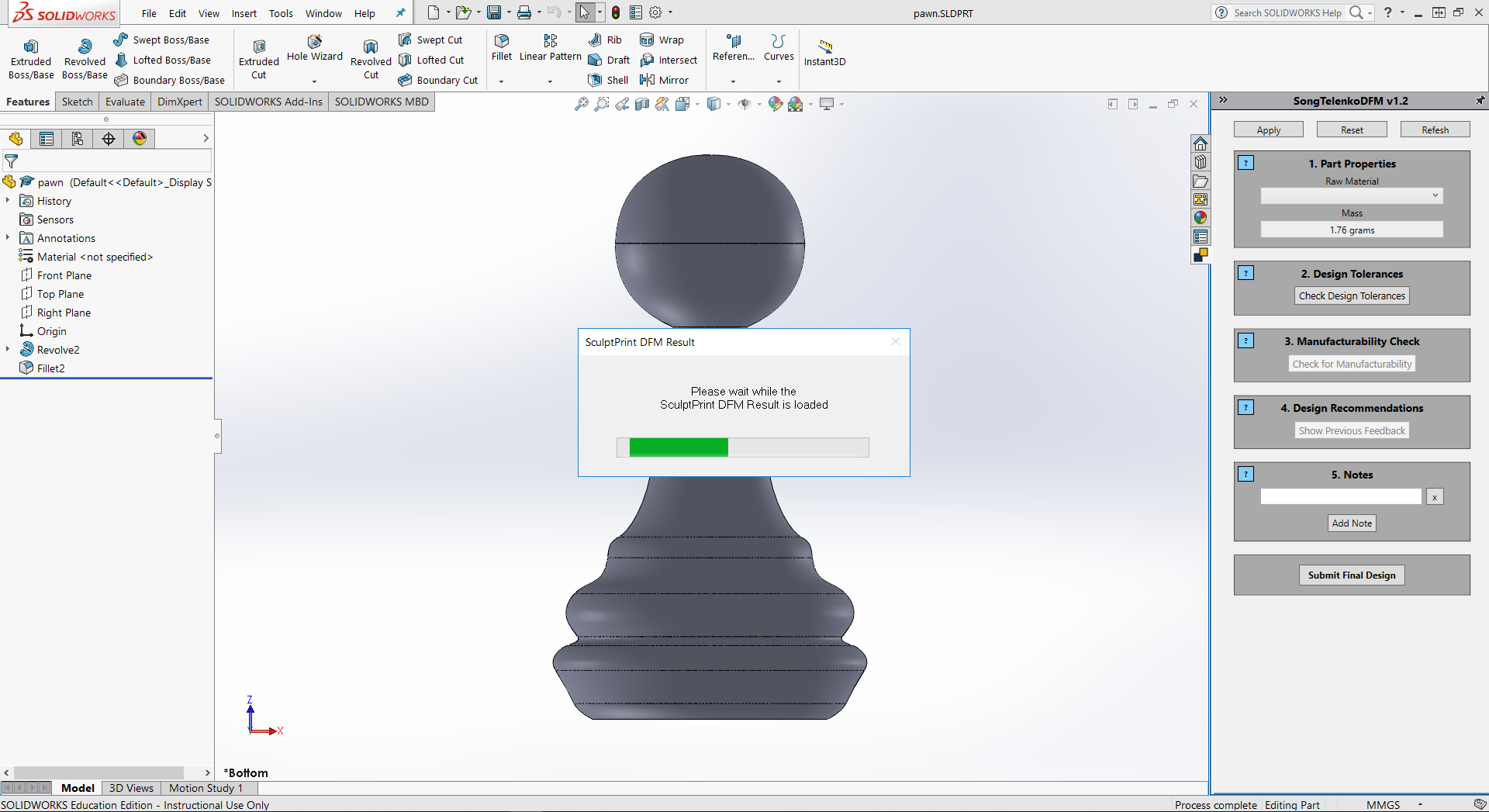
2b. SculptPrint Feedback Application

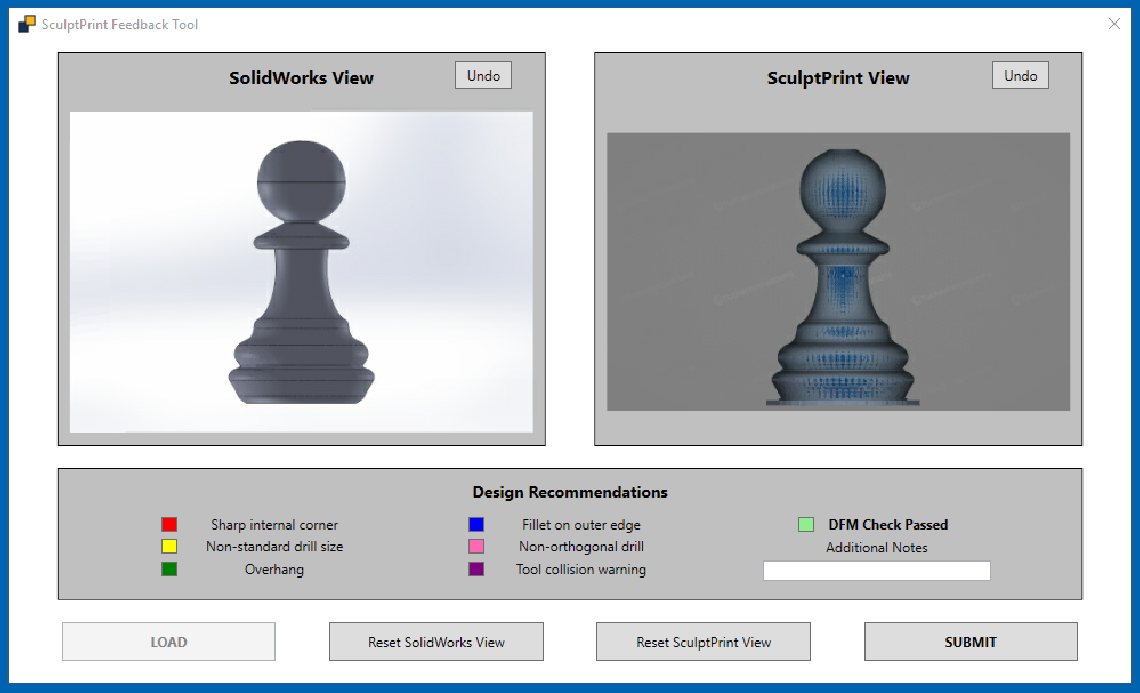
3. Usage and Functionality

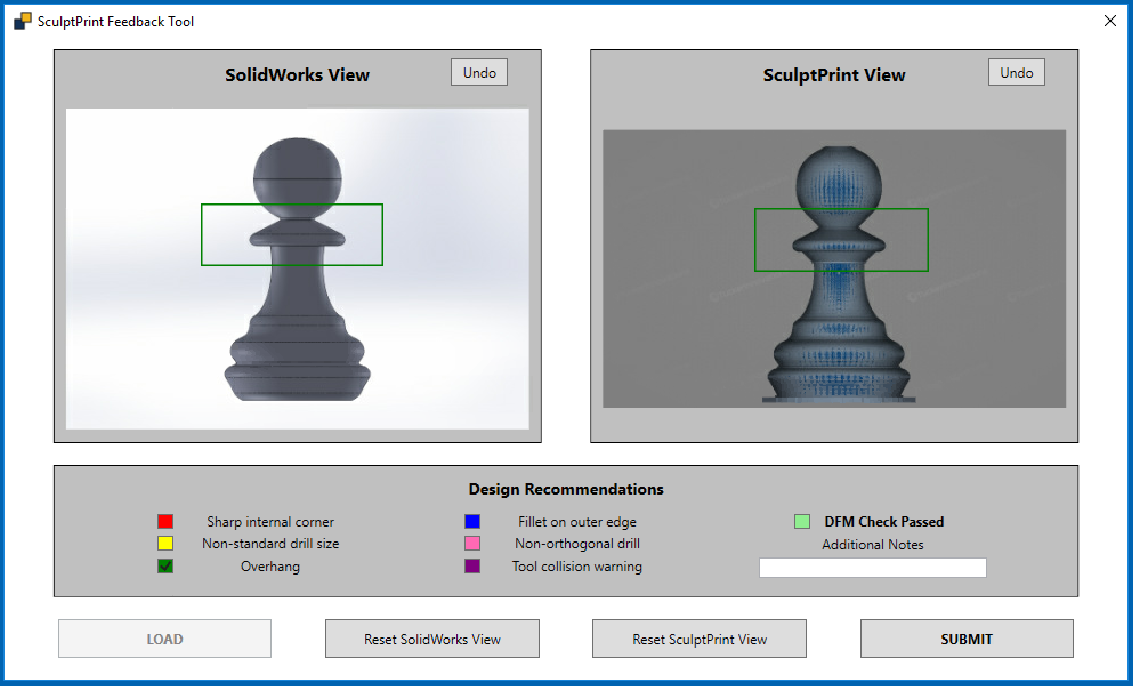
3a. General Usage Instructions

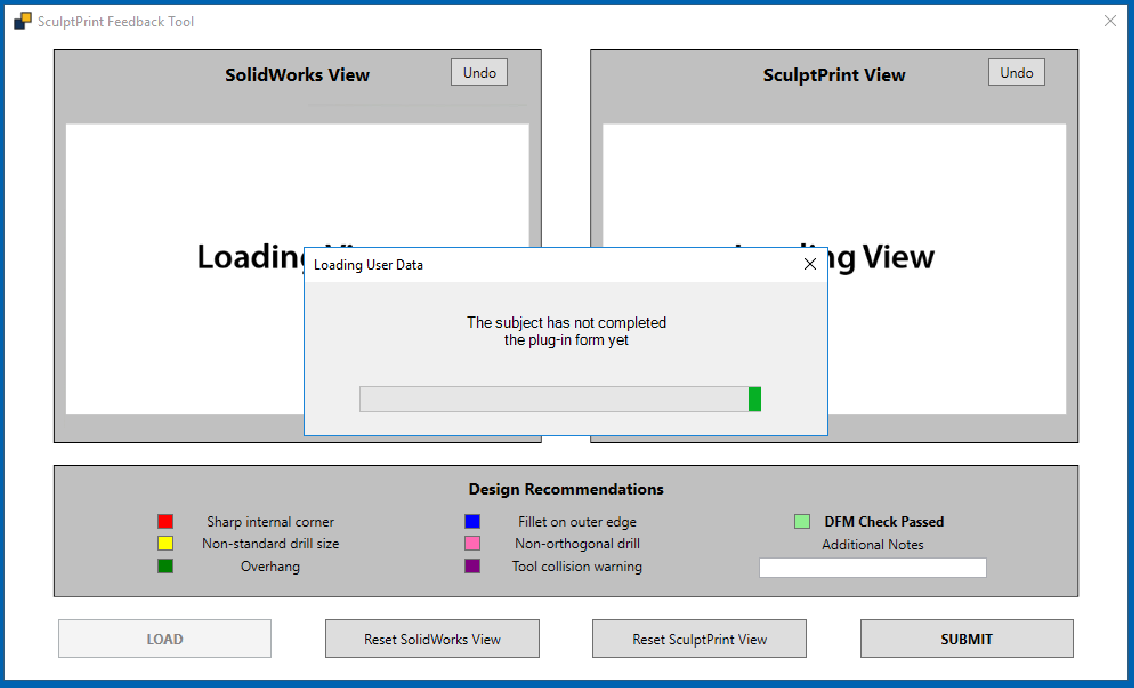
 

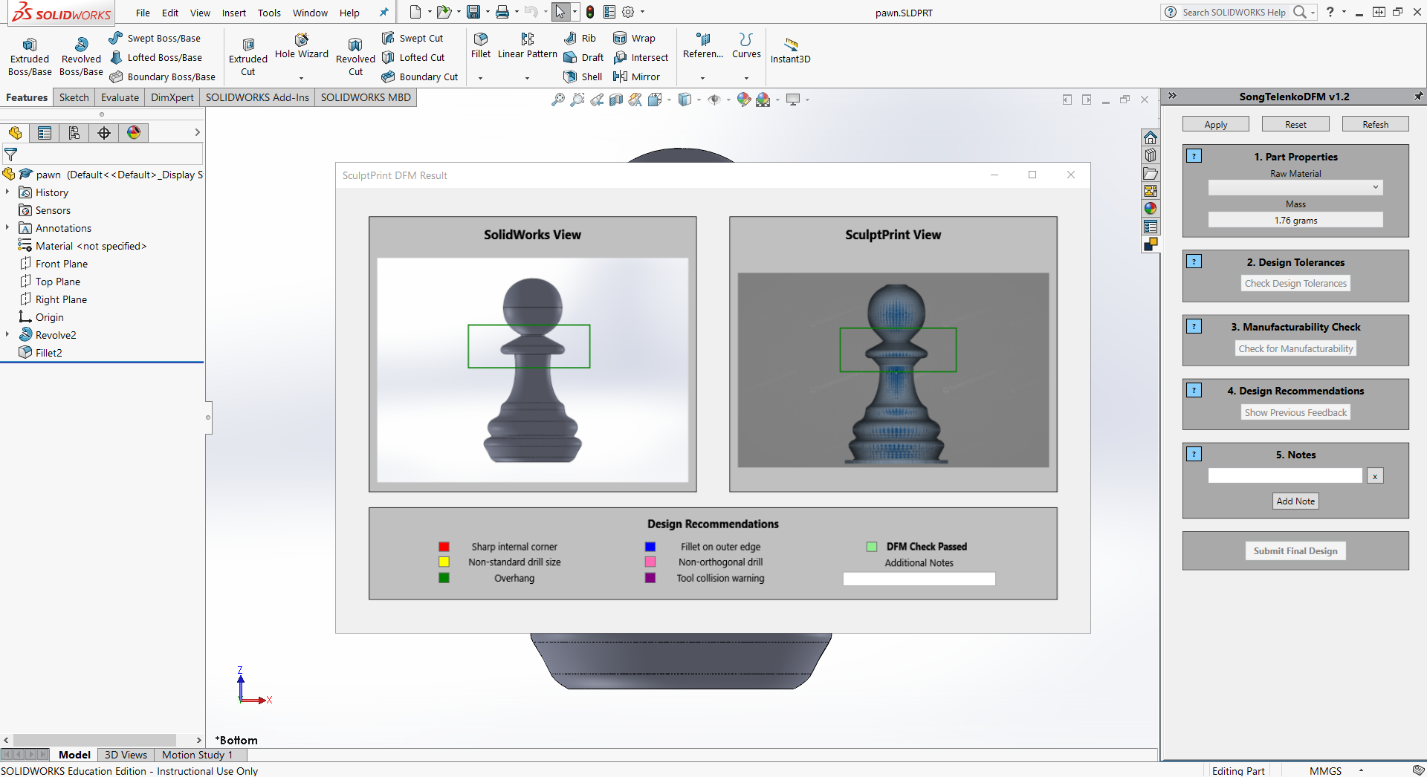












3b. Folder Structure

3c. Web Host and SFTP

4. Customization of Functionality

4a. SolidWorks Plug-In

4b. SculptPrint Feedback Application