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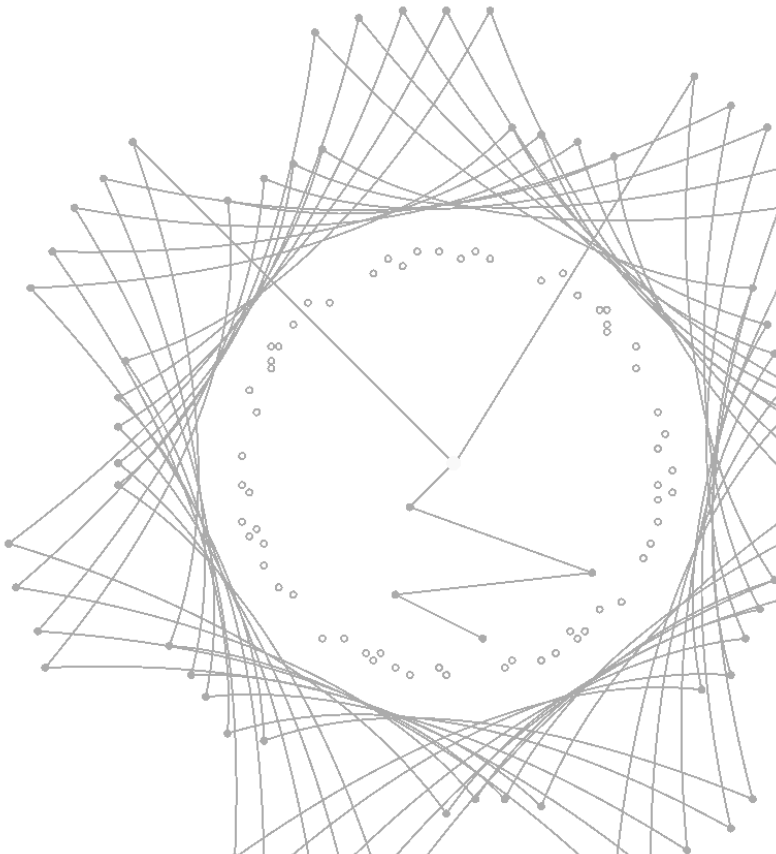
Fraiche Atelier Guide for MacOS 26.1

Fraiche Atelier (FA) is a computer application for drafting fashion patterns in a vector-like process, using a two dimensional grid. This is done by creating a line from an origin point and using this line's end point as the starting point for the next line. By repeating this process you can outline the dimensions of a garment’s pattern. Once the pattern is complete, FA allows you to generate seam allowance, and add notch markings for pinning and seam matching. FA is capable of preparing tool paths for a full garment, and allows you to place multiple patterns in a layout, and generate a single step path for use with stepper motors. (Stepper motors are a type of electronic motor that uses increments to rotate the motor a small distance. This technique is commonly used in 3D printers). FA also has serial communication functionality, to connect and control machines over USB.

Software Requirements

Currently, Fraiche Atelier officially supports MacOS 26.1, but the application may be compatible with other versions of MacOS as well. To check if your version is compatible, please check your operating system’s compatibility with Qt 6, the base graphical user interface library the application uses. The current installation also requires R to be installed via Homebrew.



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Layout and Functionality

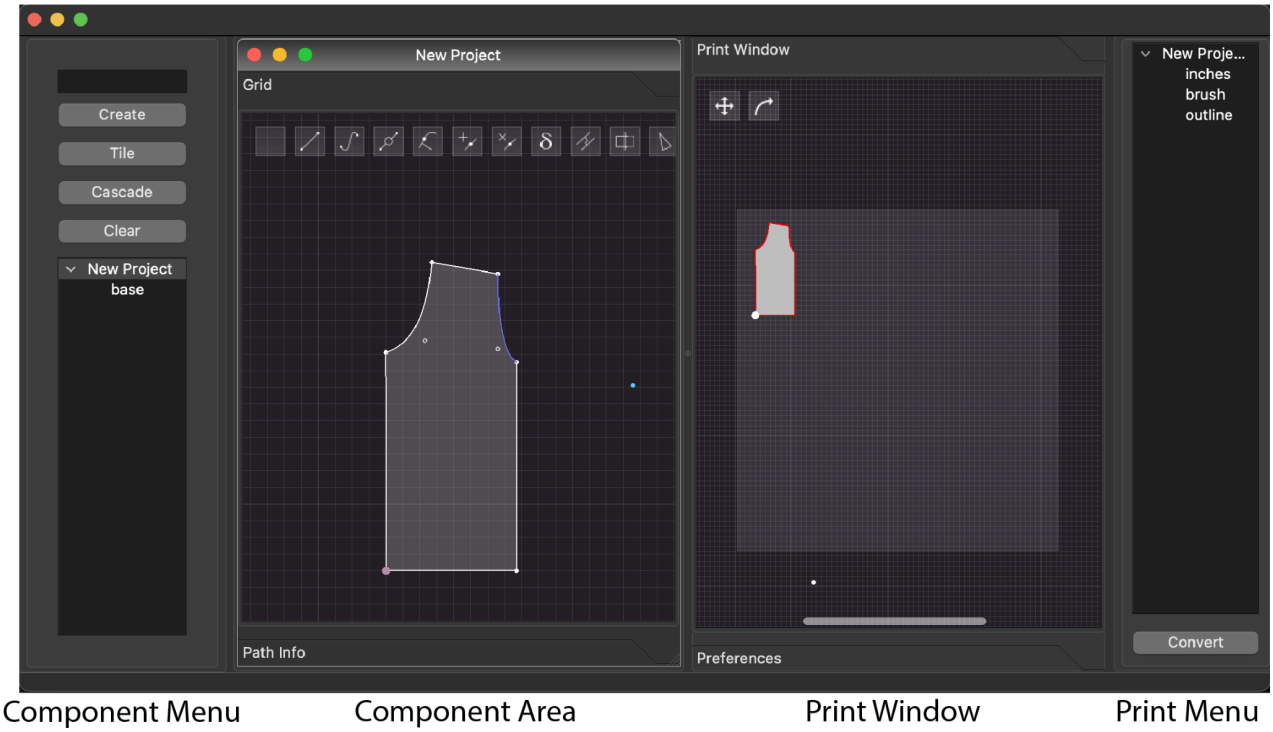

Figure 1. Basic project layout

The **Component Menu** is used to create new Components Windows. These windows appear in the **Component Area** of the interface, directly to the right of the menu. Figure 1 shows a single Component Window within the Component Area, but you can create a virtually unlimited number of components.

The **Print Window** is used to arrange multiple components together and prepare them to be converted to a single path used in printing. The **Print Menu** is used to remove components from the Print Window, or update the specifications for the printing of a component.

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Component Menu

The Component Menu is used to control Component Windows within the Component Area. To create a new component, select the text box at the top of the Component Menu (Figure 2 A), and click the “Create” button directly below it, or press “Return/Enter”.

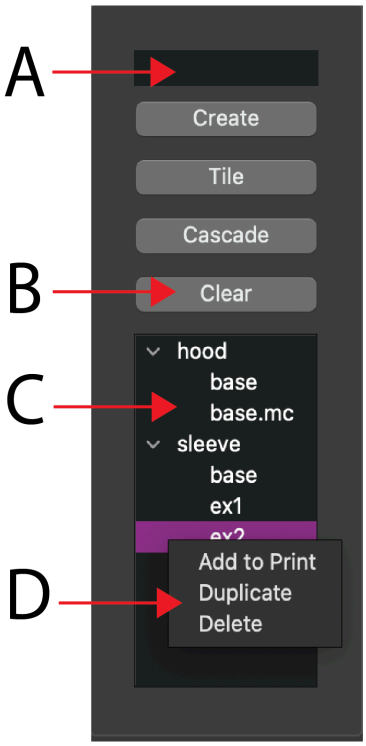

Figure 2. Component Menu

This will add a new component dropdown to the **Component Tree** (Figure 2 C). The component dropdown shows all of the layers within a component. A default layer called “base” will automatically be created with a new component. Components can have multiple layers, for drafting and revising patterns. The component names shown in the component tree are unindented, and the layers are indented.

To **rename a component**, right click on the component name within the component tree, and click “Rename.”

Closing a component window within the Component Area does not delete the data of the component, or remove it from the Component Tree. To **delete a component**, right click the component name within the Component Tree and click “Delete”.

If you wish to **show a component** that has been closed, right click the component name and click “Show”.

To show a component window in a separate, standalone window, right click the component name within the Component Tree and click “Standalone.” Only one component can be viewed in a standalone window at a time.

To add a layer to the print window, right click the layer name, and click “Add to Print.” Note: **A layer can only be added to the print window once.** To add a layer multiple times, you must duplicate it.

To **duplicate a layer**, right click the layer name and click “Duplicate.” This will create a duplicate layer with the same name, followed by a period and the letter “c,” to show it’s a copy.

To **delete a layer**, right click the layer name and click “Delete.”

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Component Windows

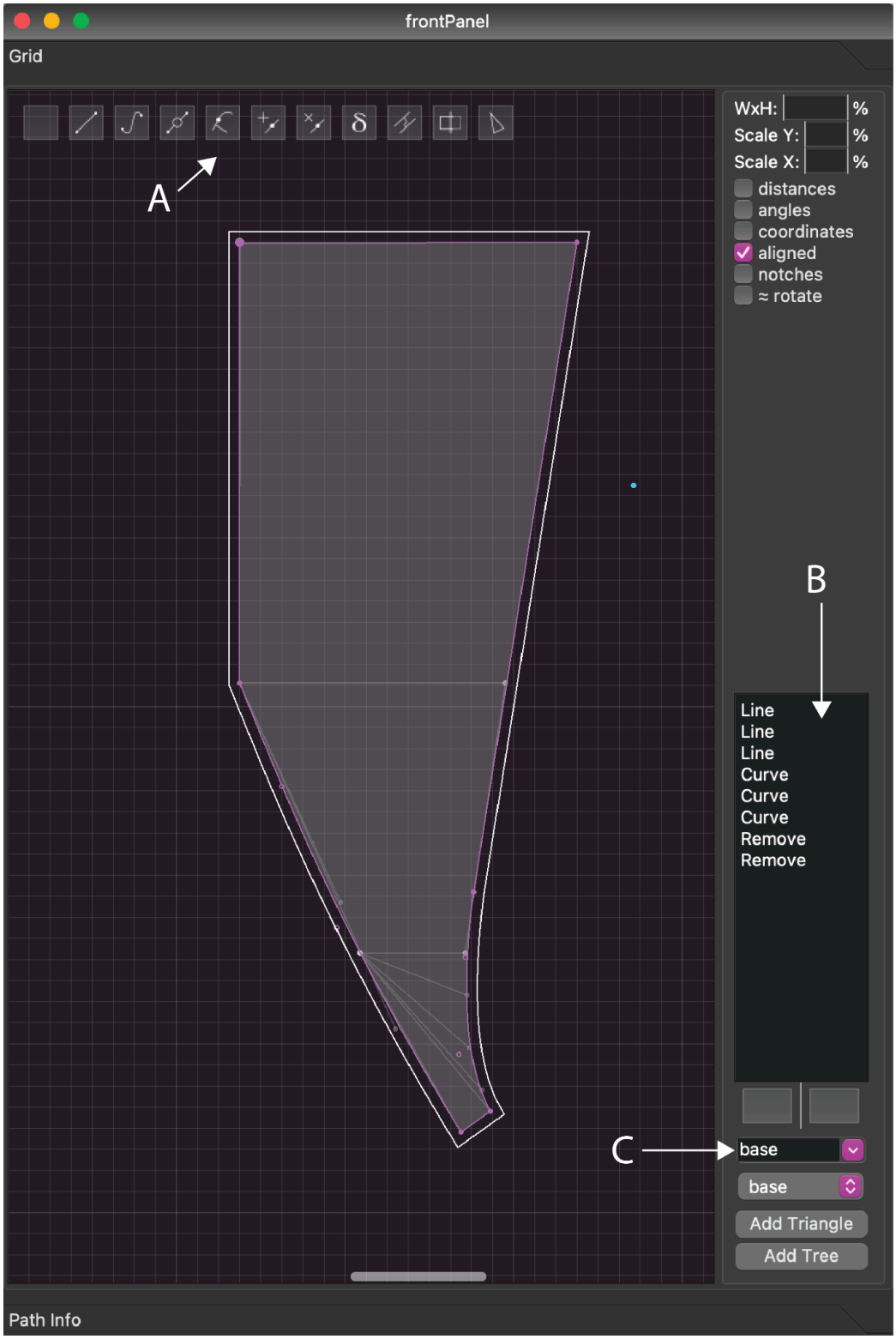

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Figure 3. Component Window

The Component Window is where most of the design work is done. It is used to input measurements, create paths, and add the final touches before moving to the export process. Complete paths appear with a transparent background. To add a path to the Print Window, or to generate seam allowance, the path must be complete.

The **Toolbar** (Figure 3 A) is at the top of the window, and is used to change the action done by the mouse. If you do not see it, press "T" on your keyboard. **Below are Toolbar actions:**

Line: used to create lines. Right clicking allows you to create a line based on height and width. This is especially useful for creating guidelines, as seen in Figure 3.

Curve: used to create a curve on a segment. The selected segment will be highlighted in purple. Each segment can have a maximum of two curve control points.

Origin: used to move the origin point to a new location.

Mirror Curve: used to create a mirrored curve on two lines.
Note: two lines must be selected.

Insert: used to insert a point on a straight line. Does not work on curved segments.

Remove: used to remove a point. On curved segments, it removes control points. Between two straight lines, it will remove the middle point, creating one line.

Notch: creates evenly spaced notches on a segment, or group of segments if more than one is selected. A popup input appears prompting for the number of notches.

Seam Allowance: creates seam allowance for the current path, if the path is complete. After creating seam allowance, FA will automatically update the path after adjustments.

Mirror: creates a mirror of the path when you click on a straight line segment. If you right click, it will create a separate layer with the mirrored path.

Select: used to select points, and reposition them. To select multiple points, press "Shift" while you drag the cursor, a selection box will appear. The selected point(s) appear highlighted in hot pink. To rotate your selected points, press "Command" while you drag.

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The panel on the right side of the Component Window is used for additional control over the component's creation. If it is not visible, press "Y." Starting at the top and continuing down, each input and its function is listed below:

WxH is used to scale the path by a percentage. For example, entering "200" will double the size of the path.

Scale Y is used to scale the path vertically only by a percentage.

Scale X is used to scale the path horizontally only by a percentage.

Selecting the **distances** checkbox will show the distances of all lines and curve segments of the path. Caution: The length for curves are calculated in real time and decreases performance of the application.

Selecting the **angles** checkbox will show the angle between two straight line segments.

Selecting the **coordinates** checkbox will display the coordinate location of the cursor in reference to the origin point. This (x,y) value is displayed at the bottom left corner of the grid.

Selecting the **aligned** checkbox will show a white circle around control points on the path that are horizontally or vertically aligned with the cursor.

Selecting the **notches** checkbox will show notches on the path segments that you have selected for notching. Caution: The notches for curves are calculated in real time and decreases performance of the application.

Selecting the ≈ **rotate** checkbox will affect the rotation behavior when you rotate points using the Select Tool. When checked, it will round the values for the path to the tenths place (0.1). If it is unchecked the number of decimals will be much larger, and therefore more precise.

The history panel (Figure 3 B) shows all of the actions you have done to the path. Pressing "Command+Z" will undo your last input. Pressing "Command+Shift+Z" will redo your previous undo.

The layer textbox (Figure 3 C) allows you to select the current layer, and create new ones. To create a new layer, type the name within the textbox and press "Return/Enter."

Below the textbox is a visible layer checklist. By checking a layer's name in the list will make it visible within the current grid.

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Print Window and Print Menu

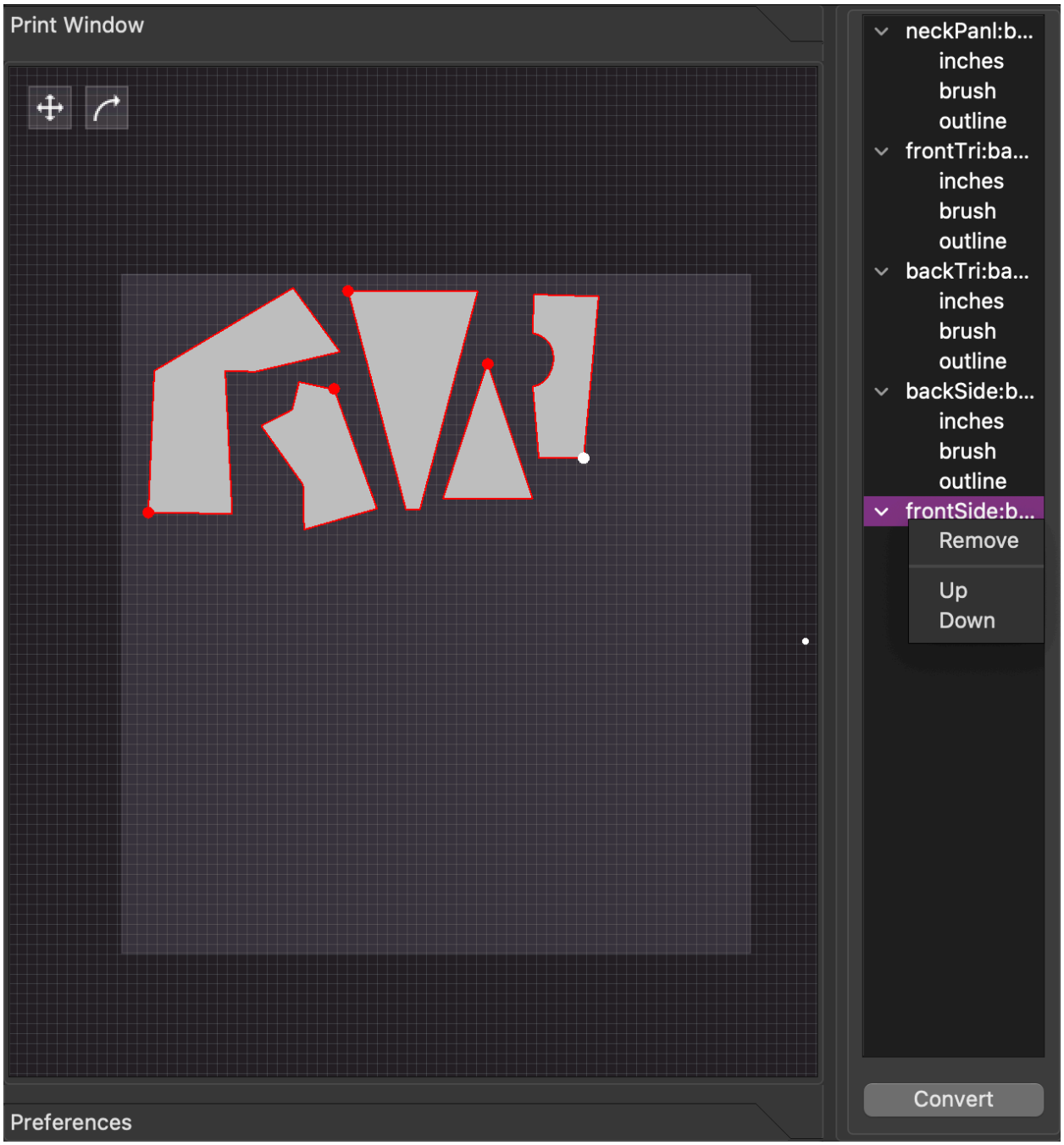

Figure 4. Print Window and Print Menu

Once you have finished all of your components, the Print Window and Print Menu can be used to create a file to be used with a 2D plotting machine, or a laser cutter.

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The grid within the **Print Window** is used to arrange multiple components in a single path for the machine. It has two tools near the top:

Move: Used to reposition a component. Similar to the Origin tool used in a Component Window.

Rotate: Used to rotate a component.

Note: Only a single component can be selected in the Print Window. The selected component is the one closest to your cursor, and its origin point will be white instead of red. For example, in Figure 4, the component on the far right is selected.

The **Print Menu** is used to remove components from the Print Window, or update the specifications for the printing of a component. It lists the “component:layer” in the order they will be printed, with additional layer info below.

Right clicking on a component name allows you to **Remove** it from the Print Window, or move it **Up/Down** within the print order.

Below the “component:layer” is information used in creating the print path.
In Figure 4:

- “inches” indicates the unit of measurement used when designing the path. By right clicking you can change this to centimeters.
- “brush” indicates the tool used by the machine. By right clicking you can change this to laser.
- “outline” indicates that the path will outline the component.

Once you have finished arranging the components, you can press “Convert.” This generates a step file, along with a preview image of the output of the step path (Figure 5). All of the components will be connected in one path, and will be printed one after another. The machine tool used (brush or laser) will shut off between each component.

Note: The step path used in the preview is a reduced version, but it has still been created based on the path of the step file. To view a full sized version, select “Window” in the menu bar at the top of the screen, and press “Preview.” Your computer's performance may be reduced, because this shows an image that may be tens of thousands of pixels in dimensions.

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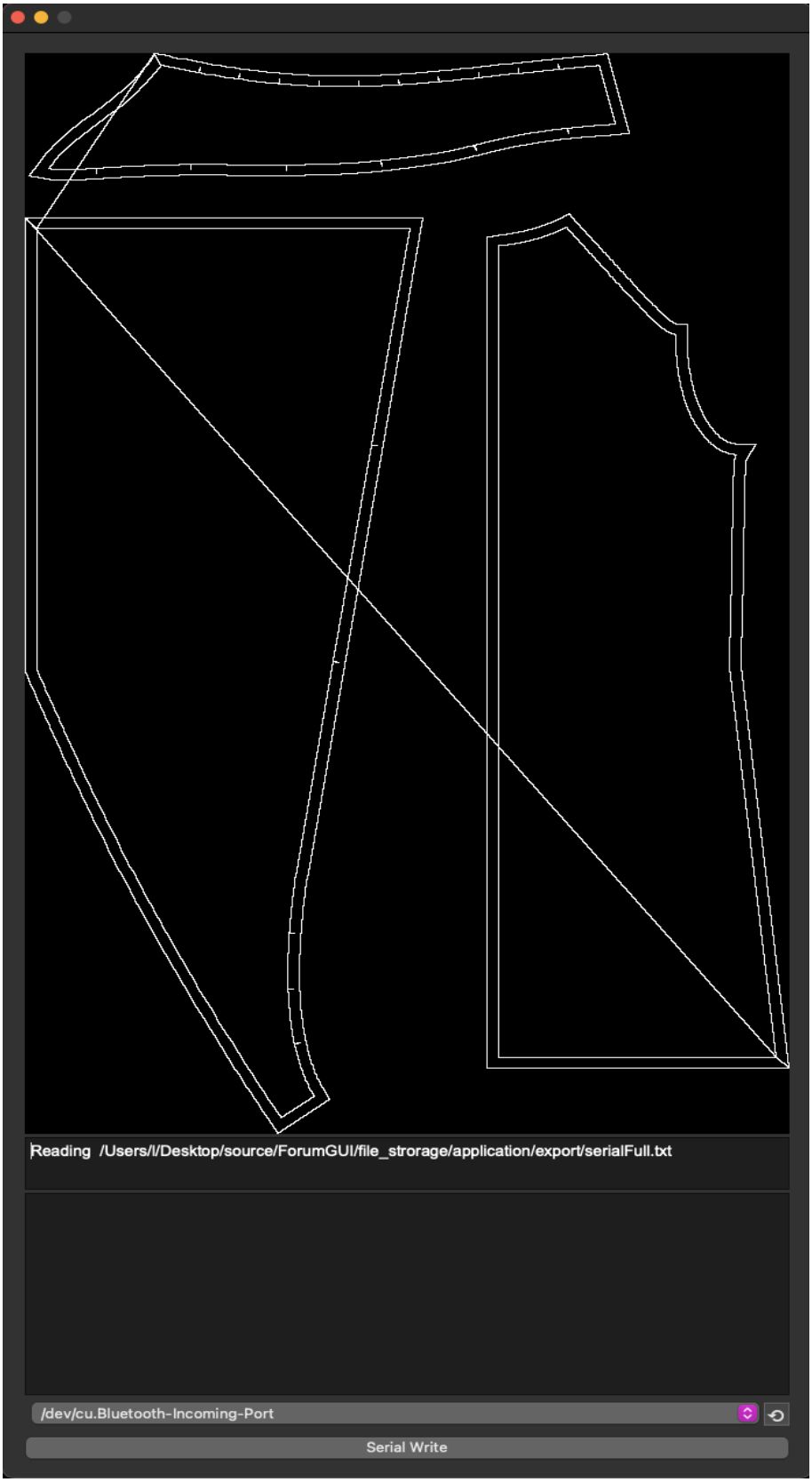

Figure 5. Print Preview Image

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Getting Started

This section demonstrates the process for outlining a single garment component (project), preparing it for printing, and producing a toolpath file. After planning the measurements and construction of your garment:

1. Open the application. If you have recently worked on a project in FA, the last file you've opened will show up automatically. To open a new file, select "File" in the menu bar at the top of the screen, and click "New", or press "Command+N."
2. Type the name of your new project in the textbox at the top left of the interface (Figure 2 A) and click "Create," or press enter. A new project dropdown will be created in the project tree below, and an empty project window will appear.
3. In the grid menu on the right of the project window, select the layer textbox (Figure 3 C) and create a new layer with the word "tree" in it. If you do not see the grid menu at first, press "Y."
   Note: By adding "tree" in the layer name, FA will recognize that the path will be used for measurements. When right clicking with the line tool, and entering in a width and height measurement, the path will return to the point from which the measurements were entered. This allows for multiple measurements to be placed from the same point.
4. When you are done entering your measurements, go back to the base layer. Begin outlining the path, creating lines in places you know will be straight. Select the curve tool and add curve points to the segments that are curved, adjusting the segment as best you can to match the measurements in the "tree" layer.
5. If the layer is complete, and the first point is at the origin (starting point), the layer will be shown with a transparent background. Select the seam allowance tool and then select the layer. Then select the notch tool, and add notches to each segment or segment group that requires notching.
   Note: When you enter the value for the number of notches, you are entering the number of divisions that will be created within the segment or segment group. If you enter two, there will be one notch because the segment was divided into two parts, with a single notch between the two halves.
6. Add the layer to the Print Window by right clicking it in the Project Tree (Figure 2 D) and selecting "Add to Print." The layer will be added to the Print Window, and its information will be displayed in the Print Menu, including project and layer name, the unit of measurement, and the machining tool (laser or airbrush).
7. When working with multiple components (project layers), arrange them within the transparent square describing the machine dimensions. Press the "Convert" button at the bottom of the Print Menu. This will generate the toolpath file, and a png preview of the final outline that has been reconstructed from the toolpath itself.