

## Foldmania

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The first step in this project was to decide the folds and techniques that would be used. Different kinds of origami folds were tested using paper as a medium. In the end, both zigzag and square fold patterns were chosen, and while both are similar, they create different angles for select areas, such as the bust. The zigzag folds change according to the distance between the folds, which were created parallel to each other, while being perpendicular to the warp. Three different methods for holding the fold in the fabric were experimented with: thread with a backstitch, small stitches in the vertex of each zigzag, and finally, heat and interface cut in the line of each fold. The last option yielded the best results, as the folds looked clean and paper-like. After the dress' idea and silhouette were decided, the folds were tested in a half scale form using paper. The fabric width was then considered in order to determine the number of folds and size, as the whole width should be used in a zero waste garment. The

fabric chosen to be used in the folds was a 100% cotton sateen, 58 inches in width, 54 inches for the front, and 52 inches for the back. Only one section of the fold was placed in a regular size form to analyze the proportion and angle of each fold. The lining was created directly in the form, controlling the shape with darts and using the parts that were cut to give shape to the neckline as a base. The fabric used in the lining is also 100% cotton, which is lighter than the other fabric used. The original cotton fabric was 61 inches in width, while each side was only 20.5 inches long. Which in turn left two 10 inch pieces that were then used to close the two origami pieces.

To better understand the garment construction, after starting to fold and cut the sateen, a muslin was made, using another cotton fabric. This step is important to define the fold angles and to solve how the fold would separate in the waist with the same distance. Two ribbons were used around the waist, stitched to the vertex of the zigzag, where the distance was the same and there

was some extra ribbon to be tied around the mannequin. This method was expected to be a problem, as the folds should be divided in two sections – front and back – while the collar should be stitched following the neckline attached to the lining. Fortunately, the folds were already deep enough to hold the shape. To do the origami front and back all fabric had to be interfaced, but not using a continuous interface: each fold is a separate piece, even the bottom of the dress, which was made with several rhombus. The ribbon strategy was also used in the bottom portion, keeping the folds from collapsing due to weight. More ribbon was then used vertically to secure the skirt of the dress. While another piece was added to give more structure to the skirt, a hard netting was then draped around the waist in the front.

The tie-dye technique was tested in a cotton muslin, in two colors, and then tested in four different cotton fabrics, already folded and with interface, to analyze which one should be used. Some samples were stitched with a plastic acetate, cut in the sample shape to make the same hombra effect as the inside of each fold. After determining which fabric would be used and interfacing everything, the two pieces were stitched separately, holding all the folds together. The pieces were dyed together to obtain the same color, while the lining fabric was dyed separately, without any seams. The plastic acetate was not used in the final piece because the salvages would be folded to create the closure with snaps. The dyeing process also helped the folds to stay in place. However, after the fabric was dry almost all the interface pieces had to be re-glued, resulting in several hours of pressing the folds with an iron. In the final garment, ribbons were added to close the folds properly, allowing the origami pieces to be transported without harming the fold orientation. The only parts that were attached to the lining were the collar and some parts in the waist, in order to maintain the shape in the bust.