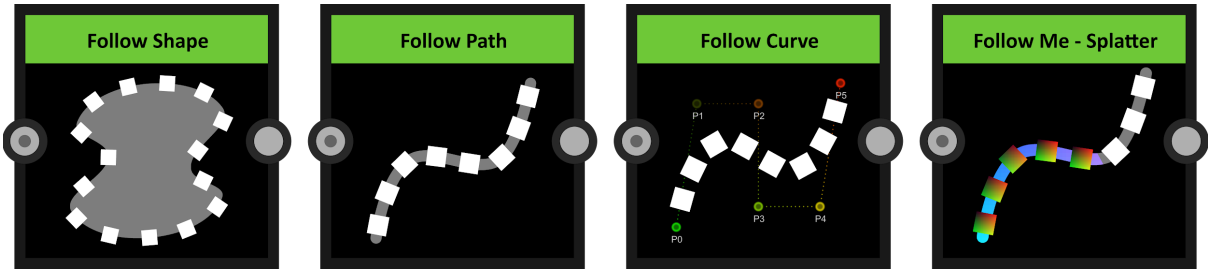
MV Follow Me - Curve Tools

The Follow Me - Curve Tools for Substance Designer is a collection of utilities, to place a pattern along shapes and paths.

It uses a robust thinning algorithm to find the center of a path or curve. It provides a large variety of parameters, to refine the result to fit exactly your needs.

Node Reference

This collection of tools consists of four nodes, the Follow Shape, the Follow Path, the Follow Curve and the Follow Me - Splatter Node.



The Follow Shape - Node

This node takes a filled shape as an **input** and places a pattern around that shape.

The following Parameters can be set:

- **Threshold (Float 1)**

  Sets the threshold for the binary conversion of the **Input Shape**.

- **Invert Shape (Float 1)**

  Inverts the **Input Shape**

- **Quality (Dropdown)**

  This sets the quality of the resulting path by basically reducing the **Image Size**. At Highest Quality the path gets processed at the original size. Depending on the size of the **Input Path**. This parameter will have a huge impact on performance.

- **Show Data**

  Shows the Shape Data Outputs to reuse the shape in a Follow Me - Splatter Node

- **Pattern (Dropdown)**

  Sets the pattern which gets distributed around the shape.

- **Pattern Specific (Float 1)**

  Sets a pattern specific value.

- **Pattern Input Number (Integer 1)**

  Sets the amount of different **Pattern Inputs**.

- **Pattern Input Distribution (Dropdown)**

  Specifies the order in which the different **Input Patterns** get distributed along the path.

- **Image Input Filtering (Dropdown)**

  Sets the filtering method of the **Input Pattern**.

- **Distribution (Dropdown)**

  Sets the distribution method for the patterns, either with a fixed distance around the shape or a fixed amount of patterns evenly spread.

- **Distance (Float 1)**

  Sets a fixed distance between the patterns. This parameter is highly dependent on the **Quality** of the shape. (This Parameter is only available if you chose the first option **Fixed Distance**)

- **Amount (Integer 1)**

  Sets a fixed amount of patterns, spread evenly along the **Input Path**. This parameter is highly dependent on the **Quality** of the shape. (This Parameter is only available if you chose the second option **Fixed Amount**)

- **Size (Float 2)**

  Sets the size of the pattern

- **Size Random (Float 2)**

  Randomizes the size of the pattern

- **Scale Map Multiplier (Float 2)**

  Sets the factor of the scale map

- **Offset (Float 1)**

  Sets the point where the first pattern is placed. Since there is no **Start-Point** in a continuous loop, the position is calculated by choosing the point with the lowest use of performance. With this parameter you can adjust this position.

- **Position Shift (Float 2)**

  Shifts the **start- and endpoint** of the distributed pattern.

- **Displacement (Float 1)**

  Displaces the distributed pattern perpendicular to the tangent angle.

- **Displacement Map Multiplier (Float 1)**

  Sets the factor of the displacement map.

- **MIrror across Tangent (Boolean)**

  Mirrors the Pattern across the tangent.

- **Position Random (Float 2)**

  Randomizes the position

- **Precision (Dropdown)**

  Sets the precision of the positioning, this parameter is highly dependent on the **Pattern Amount** and the **Quality**. It basically sets the sample count between two pixels, which can have a huge impact on the performance.

- **Rotation (Float 1)**

  Sets the rotation of the pattern

- **Rotation Random (Float 1)**

  Randomizes the rotation of the pattern

- **Rotation Map Multiplier (Float 2)**

  Sets the factor of the rotation map

- **Tangent Radius (Integer 1)**

  Sets the radius of pixels, which is used to calculate the tangent angle. Higher values give a smoother continuous direction of the patterns, but also ignores small changes in direction of the original shape.

- **Color Mode (Boolean)**

  Sets the **Color Mode** for the pattern

- **Color (Float 1)**

  Sets the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Grayscale**).

- **Color (Float 4)**

  Sets the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Color**).

- **Luminance Random (Float 1)**

  Randomizes the color of the pattern.

- **Luminance By Number (Boolean)**

  Pattern Luminance is linked to the pattern number.

- **Invert (Boolean)**

  Inverts the luminance of the pattern (This Parameter is only available, if **Luminance By Number** is set to true).

- **Color Random (Float 4)**

  Randomizes the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Color**).

- **Blending Mode (Float 1)**

  Sets the blending mode for the pattern.

- **Use Path as Background (Boolean)**

  Uses the **Input Shape** as background image.

- **Background Color (Float 1)**

  Sets the background color (This Parameter is only available, if **Color Mode** is set to **Grayscale**).

- **Background Color (Float 4)**

  Sets the background color (This Parameter is only available, if **Color Mode** is set to **Color**).

The Follow Path - Node

This node takes a path as an **input** and places a pattern along the center of that path, it can handle two-ended paths or closed loops.

The following Parameters can be set:

- **Input Path (Dropdown)**

  Sets the shape of the **Input Path**. This tells the algorithm how to search for the start- and endpoint of the path.

- **Path Smoothing (Float 1)**

  This applies a slight blur on the **Input Path** to smooth out small irregularities. This helps to prevent sudden changes in direction.

- **Threshold (Float 1)**

  Sets the threshold for the binary conversion of the **Input Path**.

- **Thinning Threshold (Float 1)**

  Sets the thinning threshold for the **Skeletonization-Algorithm**. The goal is to get a continuous one-pixel-wide path. This parameter is highly dependent on the **Threshold** and **Path Smoothing** parameters.

- **Additional Thinning Steps (Integer 1)**

  This is performing additional thinning-steps, to get a better resulting path. Usually this is not needed, but in some cases it may be necessary to get rid of small blobs not recognized by the primary algorithm. This parameter will have a huge impact on performance.

- **Quality (Dropdown)**

  This sets the quality of the resulting path by basically reducing the **Image Size**. At Highest Quality the path gets processed at the original size. Depending on the size of the **Input Path**. This parameter will have a huge impact on performance.

- **Show Path Inspector (Boolean)**

  The **Path-Inspector** shows the resulting path and marks critical areas with red dots. So you can easily identify where the issues are to solve them.

- **Show Data**

  Shows the Shape Data Outputs to reuse the shape in a Follow Me - Splatter Node

- **Pattern (Dropdown)**

  Sets the pattern which gets distributed along the path.

- **Pattern Specific (Float 1)**

  Sets a pattern specific value.

- **Pattern Input Number (Integer 1)**

  Sets the amount of different **Pattern Inputs**.

- **Pattern Input Distribution (Dropdown)**

  Specifies the order in which the different **Input Patterns** get distributed along the path.

- **Image Input Filtering (Dropdown)**

  Sets the filtering method of the **Input Pattern**.

- **Distribution (Dropdown)**

  Sets the distribution method for the patterns, either with a fixed distance along the path or a fixed amount of patterns evenly spread.

- **Distance (Float 1)**

  Sets a fixed distance between the patterns. This parameter is highly dependent on the **Quality** of the path. (This Parameter is only available if you chose the first option **Fixed Distance**)

- **Amount (Integer 1)**

  Sets a fixed amount of patterns, spread evenly along the **Input Path**. This parameter is highly dependent on the **Quality** of the path. (This Parameter is only available if you chose the second option **Fixed Amount**)

- **Size (Float 2)**

  Sets the size of the pattern. (This Parameter is not available if you choose the **Fit to Input Path** option)

- **Size Random (Float 2)**

  Randomizes the size of the pattern. (This Parameter is not available if you choose the **Fit to Input Path** option)

- **Scale Map Multiplier (Float 2)**

  Sets the factor of the scale map

- **Width (Float 1)**

  Sets the width of the pattern. (This Parameter is only available if you choose the **Fit to Input Path** option)

- **Width Random (Float 1)**

  Randomizes the width of the pattern. (This Parameter is only available if you choose the **Fit to Input Path** option)

- **Fitting Method (Dropdown)**

  This sets the method of the **Fitting-Algorithm**. This basically sets the distance to stop approximating the length. (This Parameter is only available if you choose the **Fit to Input Path** option)

- **Threshold (Dropdown)**

  This sets the minimum value of the fitting path. This is very useful, if you have a blurred input and want the pattern to be limited to a specific value of the input path. (This Parameter is only available if you choose the **Fit to Input Path** option)

- **Precision (Dropdown)**

  This sets the precision of the **Fitting-Algorithm**. This basically specifies the sample-count, which can have a huge impact on the performance. (This Parameter is only available if you choose the **Fit to Input Path** option)

- **Fit to Input Path (Boolean)**

  If this parameter is set to true, the length of the pattern gets calculated automatically and is set to the width of the **Input Path**.

- **Start Point (Dropdown)**

  Sets the point, where the first pattern is placed, you can use the **Path Inspector** to see which point is used. (This Parameter is only available if the **Input Path** is set to **Two ended Path**)

- **Offset (Float 1)**

  Sets the point where the first pattern is placed. Since there is no **Start-Point** in a continuous loop, the position is calculated by choosing the point with the lowest use of performance. With this parameter you can adjust this position. (This Parameter is only available if the **Input Path** is set to **Closed Loop**)

- **Position Shift (Float 2)**

  Shifts the **start- and endpoint** of the distributed pattern.

- **Displacement (Float 1)**

  Displaces the distributed pattern perpendicular to the tangent angle.

- **Displacement Map Multiplier (Float 1)**

  Sets the factor of the displacement map.

- **MIrror across Tangent (Boolean)**

  Mirrors the Pattern across the tangent.

- **Position Random (Float 2)**

  Randomizes the position

- **Precision (Dropdown)**

  Sets the precision of the positioning, this parameter is highly dependent on the **Pattern Amount** and the **Quality** . It basically sets the sample count between two pixels, which can have a huge impact on the performance.

- **Rotation (Float 1)**

  Sets the rotation of the pattern. (This Parameter is not available if you choose the **Fit to Input Path** option)

- **Rotation (Dropdown)**

  Sets the rotation of the pattern. (This Parameter is only available if you choose the **Fit to Input Path** option)

- **Rotation Random (Float 1)**

  Randomizes the rotation of the pattern. (This Parameter is not available if you choose the **Fit to Input Path** option)

- **Rotation Map Multiplier (Float 2)**

  Sets the factor of the rotation map

- **Tangent Radius (Integer 1)**

  Sets the radius of pixels, which is used to calculate the tangent angle. Higher values give a smoother continuous direction of the patterns, but also ignores small changes in direction of the original path.

- **Color Mode (Boolean)**

  Sets the **Color Mode** for the pattern

- **Color (Float 1)**

  Sets the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Grayscale**).

- **Color (Float 4)**

  Sets the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Color**).

- **Luminance Random (Float 1)**

  Randomizes the color of the pattern.

- **Luminance By Number (Boolean)**

  Pattern Luminance is linked to the pattern number.

- **Invert (Boolean)**

  Inverts the luminance of the pattern (This Parameter is only available, if **Luminance By Number** is set to true).

- **Color Random (Float 4)**

  Randomizes the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Color**).

- **Blending Mode (Float 1)**

  Sets the blending mode for the pattern.

- **Use Path as Background (Boolean)**

  Uses the **Input Shape** as background image.

- **Background Color (Float 1)**

  Sets the background color (This Parameter is only available, if **Color Mode** is set to **Grayscale**).

- **Background Color (Float 4)**

  Sets the background color (This Parameter is only available, if **Color Mode** is set to **Color**).

The Follow Curve- Node

With this node you can draw your own curve and place a pattern along that curve. You can use up to 11 control points to create quite complex shapes.

The following Parameters can be set:

- **Control Points (Integer)**

  Sets the amount of control points

- **Point P0 (Float2)**

  Sets the position of control point P0

- **Point P1 (Float2)**

  Sets the position of control point P1

- **Point P2 (Float2)**

  Sets the position of control point P2

- **Point P3 (Float2)**

  Sets the position of control point P3

- **Point P4 (Float2)**

  Sets the position of control point P4

- **Point P5 (Float2)**

  Sets the position of control point P5

- **Point P6 (Float2)**

  Sets the position of control point P6

- **Point P7 (Float2)**

  Sets the position of control point P7

- **Point P8 (Float2)**

  Sets the position of control point P8

- **Point P9 (Float2)**

  Sets the position of control point P9

- **Point P10 (Float2)**

  Sets the position of control point P10

- **Quality (Dropdown)**

  This sets the quality of the resulting path by basically reducing the **Sample Count**. This parameter will have a huge impact on performance

- **Show Curve Inspector (Boolean)**

  The **Curve Inspector** shows the resulting path and control points. So you can easily draw you own curve

- **Show Data**

  Shows the Shape Data Outputs to reuse the shape in a Follow Me - Splatter Node

- **Pattern (Dropdown)**

  Sets the pattern which gets distributed along the path.

- **Pattern Specific (Float 1)**

  Sets a pattern specific value.

- **Pattern Input Number (Integer 1)**

  Sets the amount of different **Pattern Inputs**.

- **Pattern Input Distribution (Dropdown)**

  Specifies the order in which the different **Input Patterns** get distributed along the path.

- **Image Input Filtering (Dropdown)**

  Sets the filtering method of the **Input Pattern**.

- **Distribution (Dropdown)**

  Sets the distribution method for the patterns, either with a fixed distance along the path or a fixed amount of patterns evenly spread.

- **Distance (Float 1)**

  Sets a fixed distance between the patterns. This parameter is highly dependent on the **Quality** of the path. (This Parameter is only available if you chose the first option **Fixed Distance**)

- **Amount (Integer 1)**

  Sets a fixed amount of patterns, spread evenly along the **Input Path**. This parameter is highly dependent on the **Quality** of the path. (This Parameter is only available if you chose the second option **Fixed Amount**)

- **Size (Float 2)**

  Sets the size of the pattern. (This Parameter is not available if you choose the **Fit to Input Path** option)

- **Size Random (Float 2)**

  Randomizes the size of the pattern. (This Parameter is not available if you choose the **Fit to Input Path** option)

- **Scale Map Multiplier (Float 2)**

  Sets the factor of the scale map

- **Position Shift (Float 2)**

  Shifts the **start- and endpoint** of the distributed pattern.

- **Displacement (Float 1)**

  Displaces the distributed pattern perpendicular to the tangent angle.

- **Displacement Map Multiplier (Float 1)**

  Sets the factor of the displacement map.

- **MIrror across Tangent (Boolean)**

  Mirrors the Pattern across the tangent.

- **Position Random (Float 2)**

  Randomizes the position

- **Precision (Dropdown)**

  Sets the precision of the positioning, this parameter is highly dependent on the **Pattern Amount** and the **Quality** . It basically sets the sample count between two pixels, which can have a huge impact on the performance.

- **Rotation Random (Float 1)**

  Randomizes the rotation of the pattern

- **Rotation Map Multiplier (Float 2)**

  Sets the factor of the rotation map

- **Tangent Radius (Integer 1)**

  Sets the radius of pixels, which is used to calculate the tangent angle. Higher values give a smoother continuous direction of the patterns, but also ignores small changes in direction of the original path.

- **Color Mode (Boolean)**

  Sets the **Color Mode** for the pattern

- **Color (Float 1)**

  Sets the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Grayscale**).

- **Color (Float 4)**

  Sets the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Color**).

- **Luminance Random (Float 1)**

  Randomizes the color of the pattern.

- **Luminance By Number (Boolean)**

  Pattern Luminance is linked to the pattern number.

- **Invert (Boolean)**

  Inverts the luminance of the pattern (This Parameter is only available, if **Luminance By Number** is set to true).

- **Color Random (Float 4)**

  Randomizes the color of the pattern (This Parameter is only available, if **Color Mode** is set to **Color**).

- **Blending Mode (Float 1)**

  Sets the blending mode for the pattern.

- **Use Path as Background (Boolean)**

  Uses the **Input Shape** as background image.

- **Background Color (Float 1)**

  Sets the background color (This Parameter is only available, if **Color Mode** is set to **Grayscale**).

- **Background Color (Float 4)**

  Sets the background color (This Parameter is only available, if **Color Mode** is set to **Color**).

The Follow Me - Splatter Node

This node takes the data from already created paths from the Follow Path, Follow Shape and Follow Curve Node and places a pattern along the path.

For this just plug in the corresponding data-outputs and create a new pattern along the already created path.

Further Development

Here you can find my Roadmap on the next version of these Nodes.

Bugfixes

New Features and Improvements

- **Path-Healing** Algorithm, to make the path creation more stable
- Improving the **Thinning-Algorithm**, so the path creation gets easier.
- Performance optimizations

Thank you for purchasing this Node-System if you have questions or feature requests please let me know.