Pixar Patterns

Image from "*Coco*"

While Materials control the appearance of an object, patterns control the detail by varying the parameters of the material's Bxdf across a surface. This is similar to the way texture artists use textures to control the look of a material. RenderMan ships with a set of patterns that allow texturing, color correction, bumping, and various utility shading systems.

The patterns can be divided into the following categories:

Image Texture

Drive patterns with texture images.

- PxrMultiTexture
- PxrProjectionLayer
- PxrPtexture
- PxrTexture

Procedural Texture

Procedurally create noise and patterns.

- PxrChecker
- PxrCurvature
- PxrFractal
- PxrVoronoise
- PxrWorley

Manifolds

Manifolds tell the renderer how to apply patterns on a surface. This controls features like repetition, placement, and size.

- PxrManifold2D
- PxrBumpManifold2D
- PxrManifold3D
- PxrProjector
- PxrRandomTextureManifold
- PxrRoundCube
- PxrTileManifold

Color

Create or modify colors in the shading network.

- PxrBlackBody
- PxrBlend
- PxrClamp
- PxrColorCorrect
- PxrExposure
- PxrGamma
- PxrHairColor
- PxrHSL
- PxrInvert
- PxrLayeredBlend
- PxrMix
- PxrProjectionStack
- PxrRamp
- PxrRemap
- PxrThinFilm
- PxrThreshold
- PxrVary

Bump

Create low amplitude embossing effects.

- PxrBump
- PxrNormalMap
- PxrFlakes
- aaOceanPrmanShader

Geometry Nodes

You can use these nodes to calculate geometric properties and vectors.

- PxrDirt
- PxrDispScalarLayer
- PxrDispTransform
- PxrDispVectorLayer
- PxrDot
- PxrCross
- PxrFacingRatio
- PxrTangentField

Script

- OSL Patterns
- PxrSeExpr

Utility

- PxrAttribute
- PxrMatteID
- PxrPrimvar
- PxrVariable
- PxrToFloat
- PxrToFloat3
- PxrTee
- PxrShadedSide

Baking

These passthrough patterns are designed to allows users to bake arbitrary pattern networks.

- PxrBakeTexture
- PxrBakePointCloud

Link