

Package: nativeshadr (via r-universe)

October 18, 2026

Title Introduction of 'HLSL' Syntax to 'Rcpp'

Version 3.9.0

Description Brings 'HLSL'-like syntax to 'Rcpp' codes via the 'HLSL++' library <<https://github.com/redorav/hlslpp>>.

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Imports cli, colorfast, Rcpp, RcppParallel

Suggests fastpng, grid, testthat (>= 3.0.0), vdiffir

LinkingTo Rcpp, RcppParallel

Config/roxygen2/version 8.1.0

Config/testthat/edition 3

Encoding UTF-8

Roxygen list(markdown = TRUE)

SystemRequirements GNU make

Config/pak/sysreqs cmake make

Repository <https://paithiov909.r-universe.dev>

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RemoteUrl <https://github.com/paithiov909/nativeshadr>

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ascii_filter	<i>ASCII filter</i>
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Description

ASCII filter

Usage

```
ascii_filter(nr, sc_factor = 128, intensity = 0.8)
```

Arguments

nr	A nativeRaster object.
sc_factor	A numeric scalar; the scale factor.
intensity	A numeric scalar; the intensity of filter edge. Set to 0 to disable the filter.

Value

A nativeRaster object.

deform	<i>Deformation</i>
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Description

Deforms the image by sampling it at $uv + \text{float2}(\sin(uv.y * \text{freq.x}) * \text{amp.x}, \cos(uv.x * \text{freq.y}) * \text{amp.y})$.

Usage

```
deform(nr, freq = c(10, 10), amp = c(0.1, 0.1))
```

Arguments

nr	A nativeRaster object.
freq	A numeric vector of length 2; the frequency of the deformation.
amp	A numeric vector of length 2; the amplitude of the deformation.

Value

A nativeRaster object.

`godray`*Godray effect*

Description

Godray effect

Usage

```
godray(  
  nr,  
  parallel = FALSE,  
  angle = pi/6,  
  center = c(0, 0),  
  gain = 0.5,  
  lacunarity = 2.5,  
  alpha = 1,  
  octaves = 5,  
  time = 0  
)
```

Arguments

<code>nr</code>	A nativeRaster object.
<code>parallel</code>	A logical scalar; whether to use parallel lighting.
<code>angle</code>	A numeric scalar; the angle of the light. If <code>parallel</code> is FALSE, this is ignored.
<code>center</code>	A numeric vector of length 2; the offset coordinates to roughly change the position of the light. If <code>parallel</code> is TRUE, this is ignored.
<code>gain</code>	A numeric scalar; the gain of the effect.
<code>lacunarity</code>	A numeric scalar; the lacunarity of the effect.
<code>alpha</code>	A numeric scalar; the alpha of the effect.
<code>octaves</code>	A numeric scalar; the octaves of turbulence.
<code>time</code>	A numeric scalar; ellapsed time.

Value

A nativeRaster object.

gritty_shade	<i>Multiply turbulence to the image</i>
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Description

Multiply turbulence to the image

Usage

```
gritty_shade(  
  nr,  
  lacunarity = 2,  
  gain = 1.2,  
  intensity = 0.4,  
  octaves = 5,  
  time = 0  
)
```

Arguments

nr	A nativeRaster object.
lacunarity	A numeric scalar; the lacunarity of the effect.
gain	A numeric scalar; the gain of the effect.
intensity	A numeric scalar; the intensity of the effect.
octaves	A numeric scalar; the octaves of turbulence.
time	A numeric scalar; ellapsed time.

Value

A nativeRaster object.

rgb_split	<i>Chromatic aberration effect</i>
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Description

Chromatic aberration effect

Usage

```
rgb_split(nr, r = c(0.01, 0), g = c(0, 0.01), b = c(0, 0))
```

Arguments

nr	A nativeRaster object.
r, g, b	A numeric vector of length 6; X and Y offsets for the red, green and blue channels (in uv coordinates).

Value

A nativeRaster object.

ripple	<i>Ripple effect</i>
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Description

Adds a ripple effect to the image by sampling it at $uv + \sin(\text{length}(uv - \text{center}) * \text{freq}) * \text{amp}$.

Usage

```
ripple(nr, center = rev(dim(nr))/2, freq = 50, amp = 0.01)
```

Arguments

nr	A nativeRaster object.
center	A numeric vector of length 2. The distortion of the effect increases the farther they are from this point.
freq	A numeric scalar; the frequency of the effect.
amp	A numeric scalar; the amplitude of the effect.

Value

A nativeRaster object.

shockwave	<i>Shockwave effect</i>
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Description

Shockwave effect

Usage

```
shockwave(  
  nr,  
  center = rev(dim(nr))/2,  
  speed = log(min(dim(nr))),  
  amp = 50,  
  wave_length = 160,  
  brightness = 1,  
  radius = -1,  
  time = 1  
)
```

Arguments

nr	A nativeRaster object.
center	A numeric vector of length 2; the center coordinates where the shockwave starts.
speed	A numeric scalar; the speed about the shockwave ripples out (in pixels per time).
amp	A numeric scalar; the amplitude of the shockwave.
wave_length	A numeric scalar; the wave length of the shockwave.
brightness	A numeric scalar; the brightness of the shockwave.
radius	A numeric scalar; The maximum radius of the shockwave. Set to -1 for infinite radius.
time	A numeric scalar; ellapsed time.

Value

A nativeRaster object.

twist	<i>Twist effect</i>
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Description

Twist effect

Usage

```
twist(nr, offset = rev(dim(nr))/2, angle = pi, radius = 100, padding = 0)
```

Arguments

nr	A nativeRaster object.
offset	A numeric vector of length 2; the offset coordinates to change the position of the center of the effect.
angle	A numeric scalar; the angle of the twist.
radius	A numeric scalar; the radius of the twist.
padding	A numeric scalar; padding for the filter area.

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Value

A nativeRaster object.

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