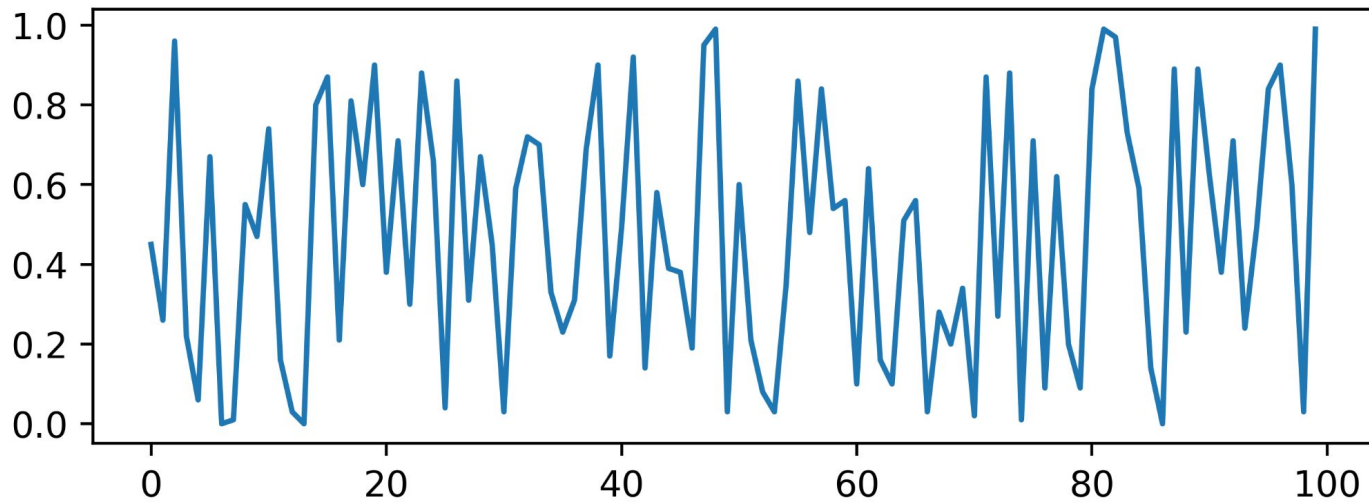
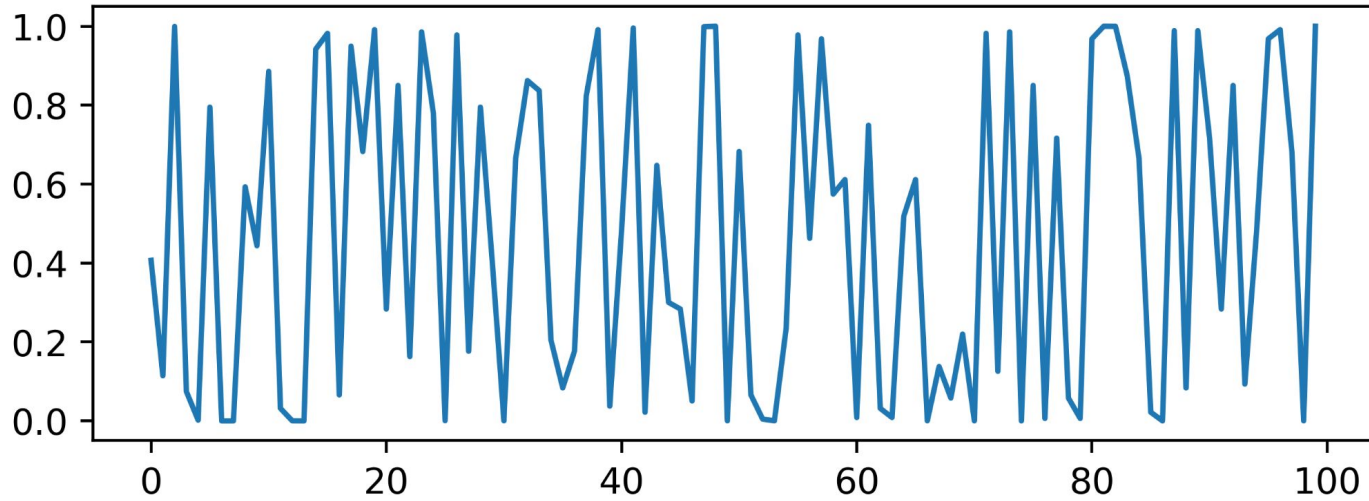
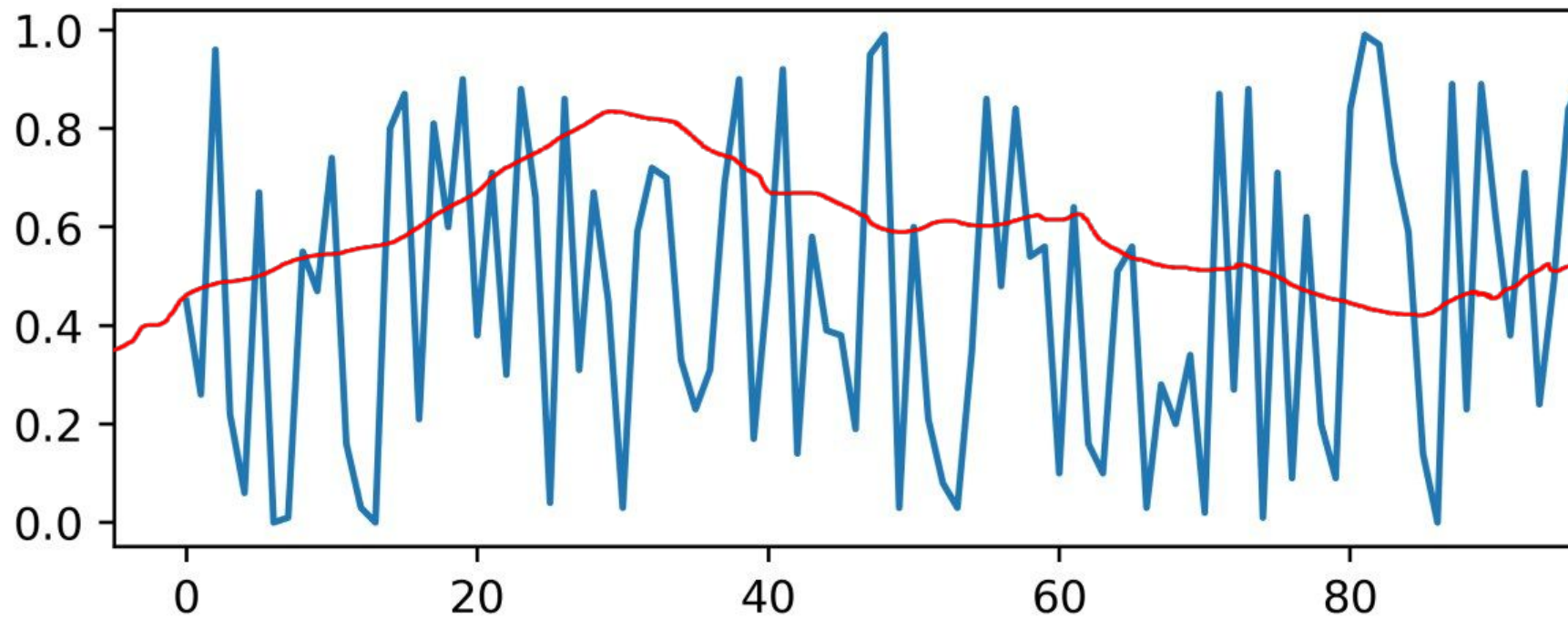


# Procedural Generation

Denysenko Stepan 31.03.2023

# Random noise function vs smoothed random





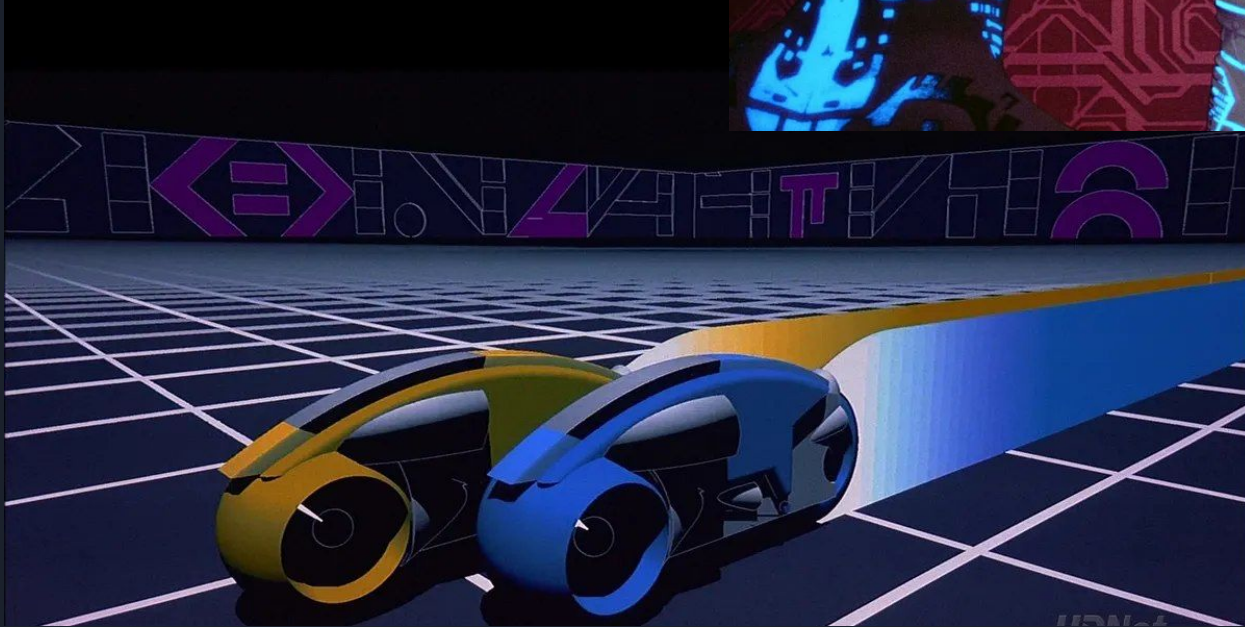
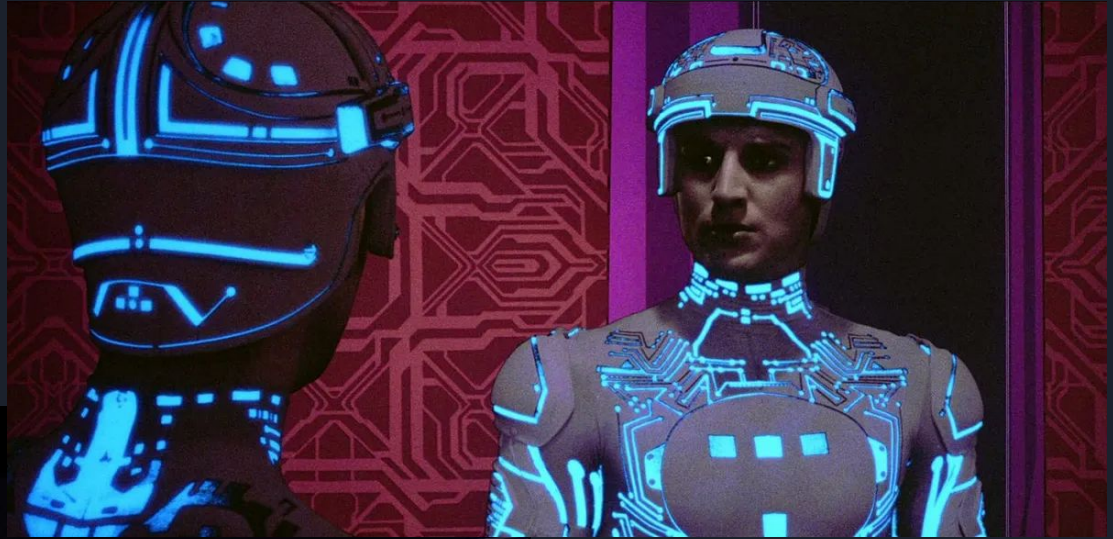


# Examples of procedural generation

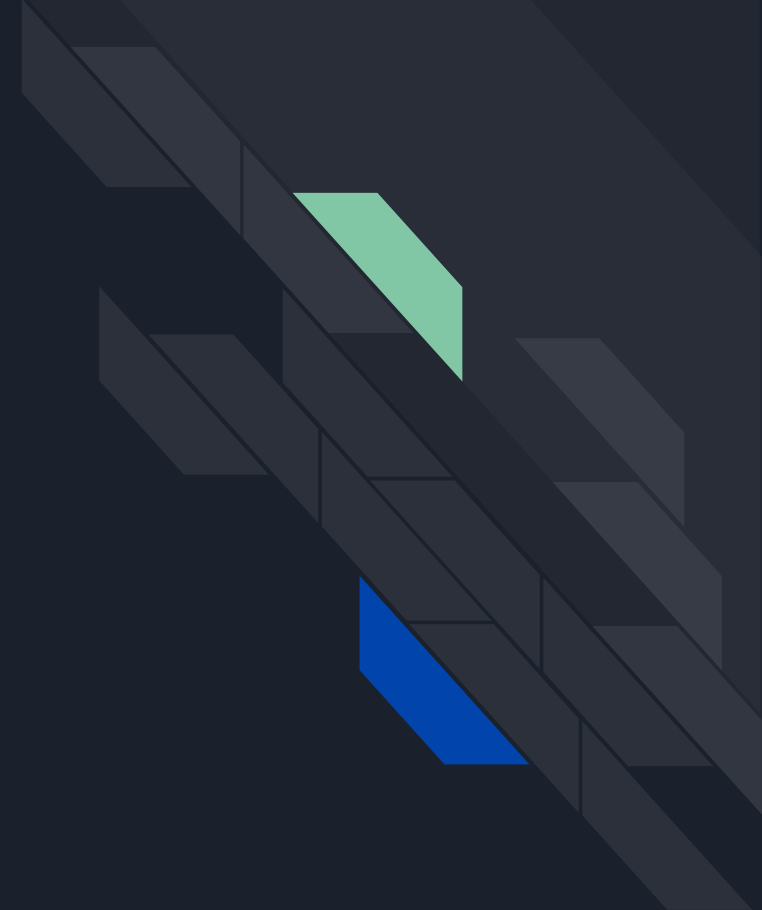




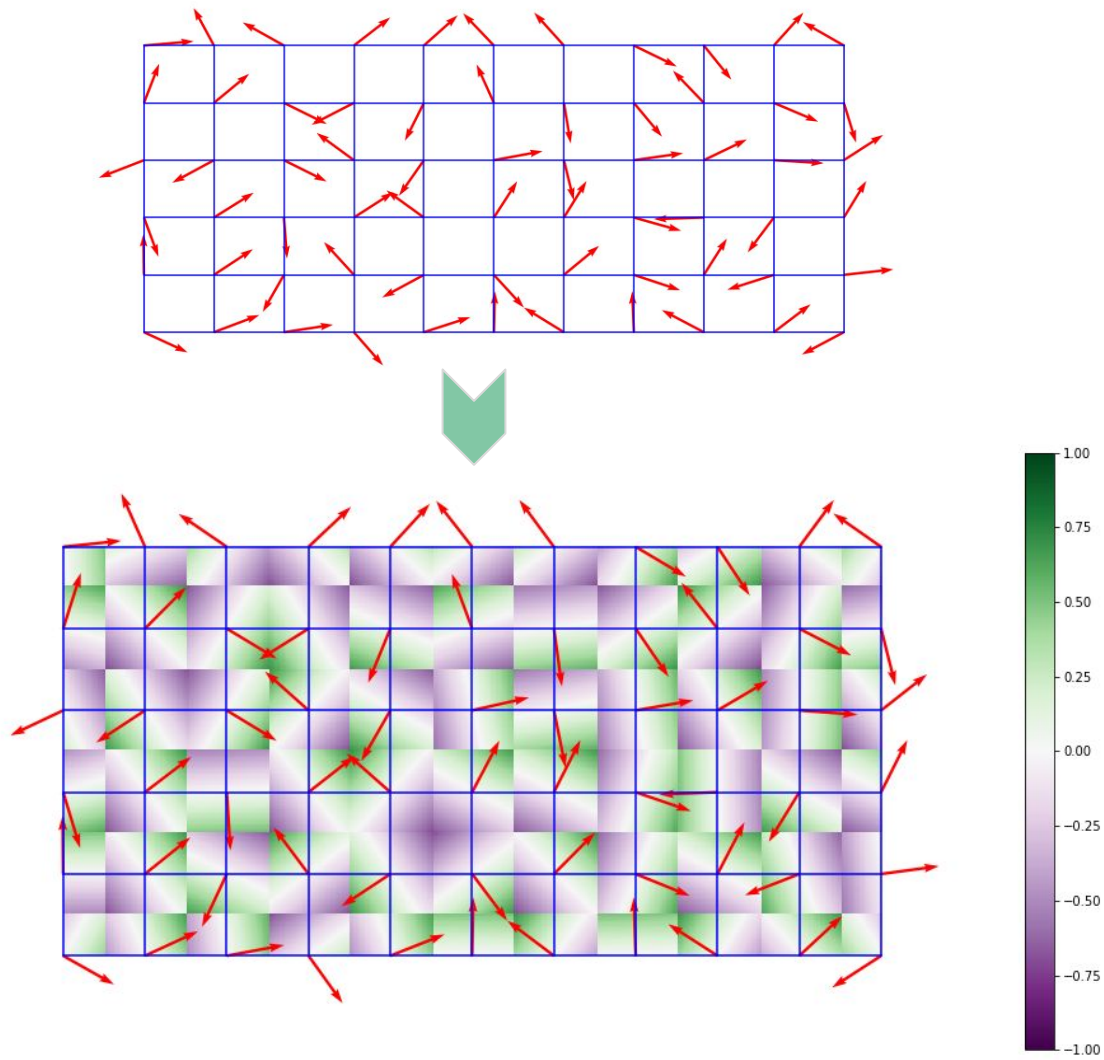
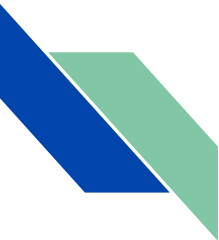
# Early 80's CGI



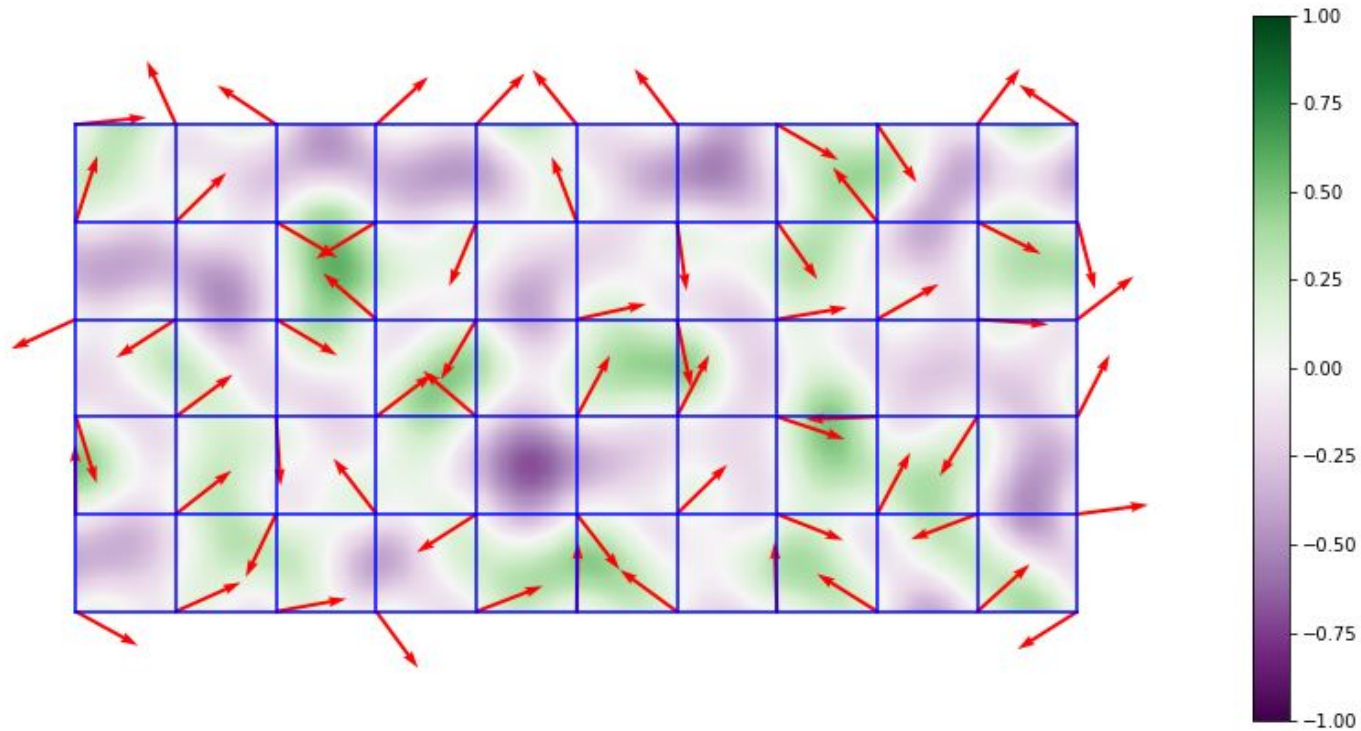
# Algorithm







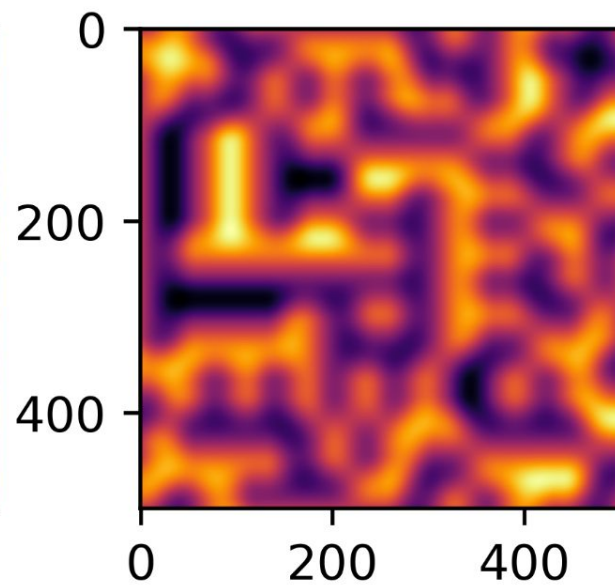
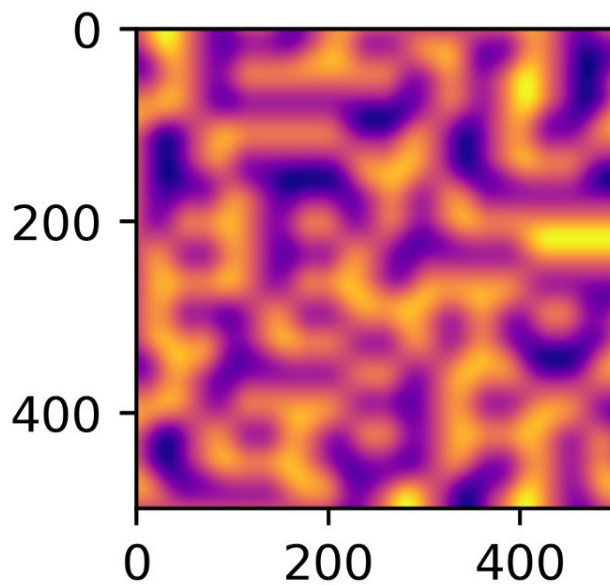
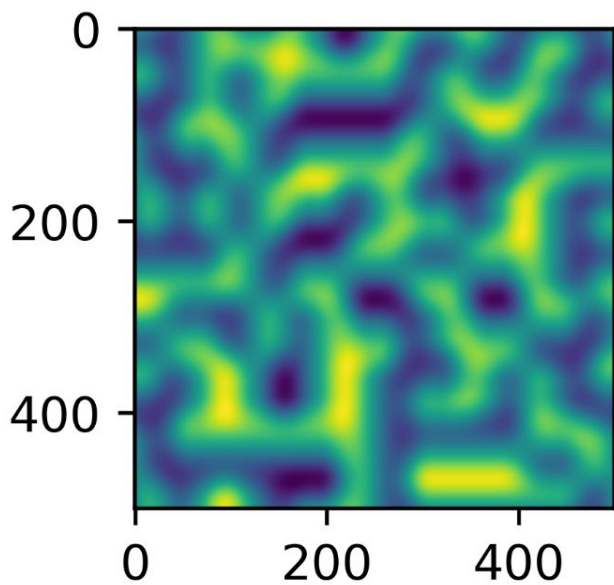
# Interpolation

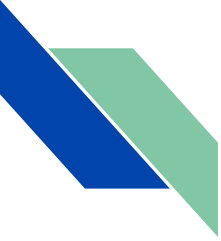




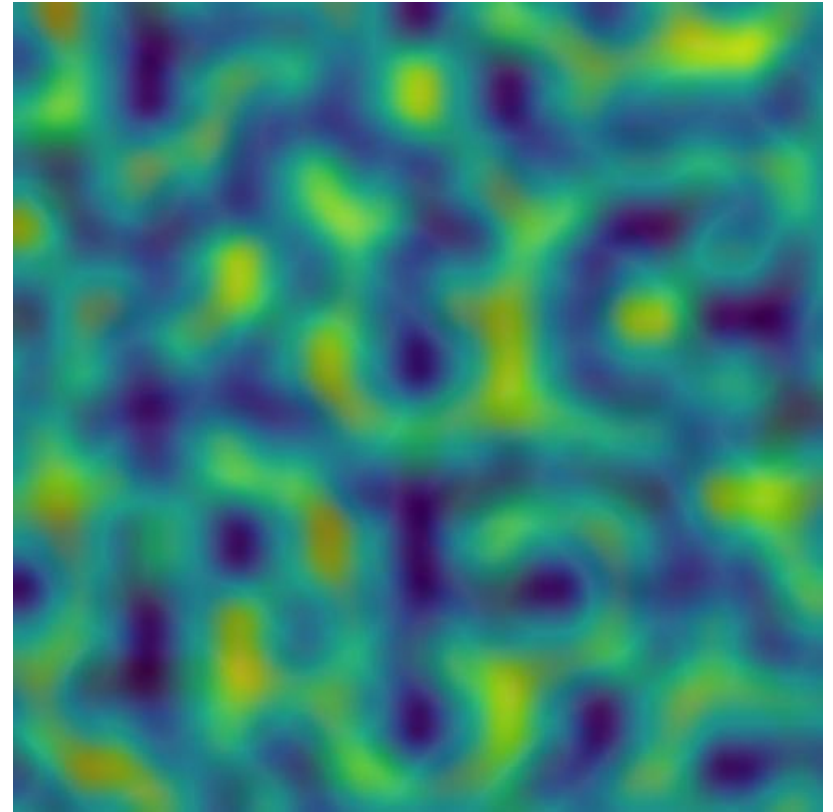
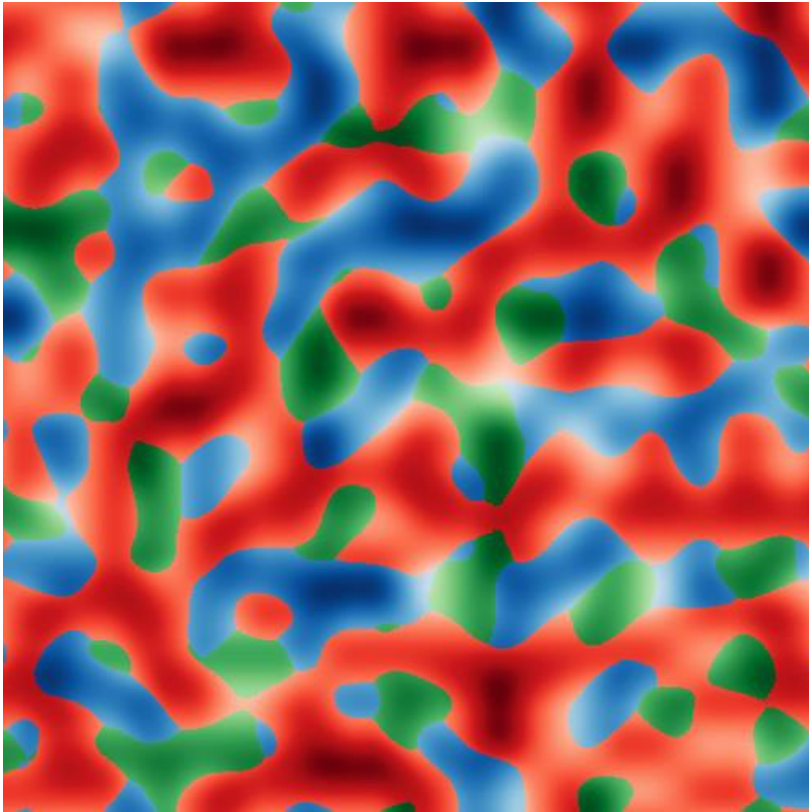


# Perlin noise examples

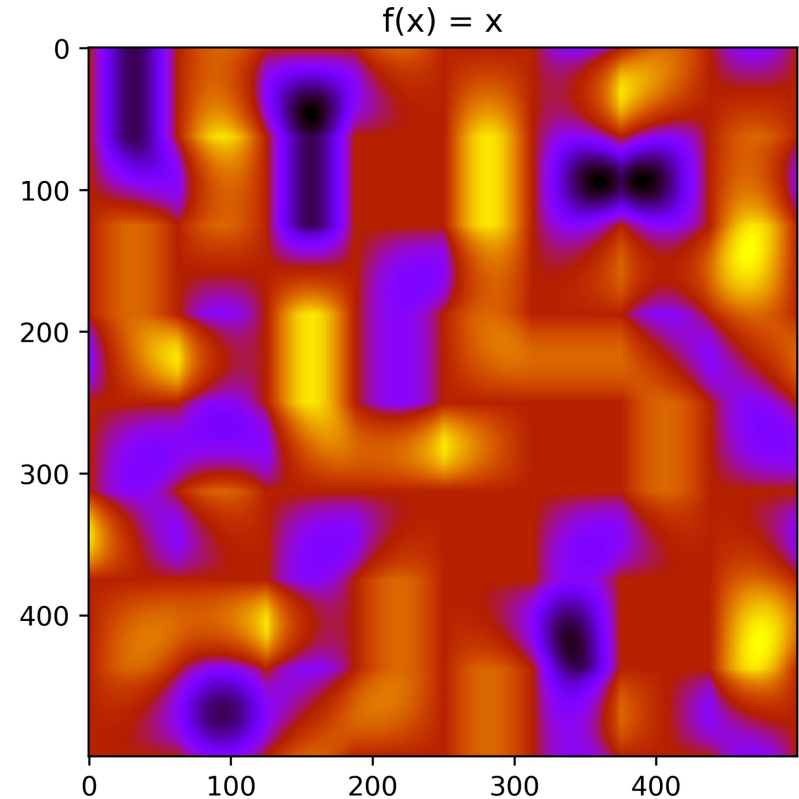
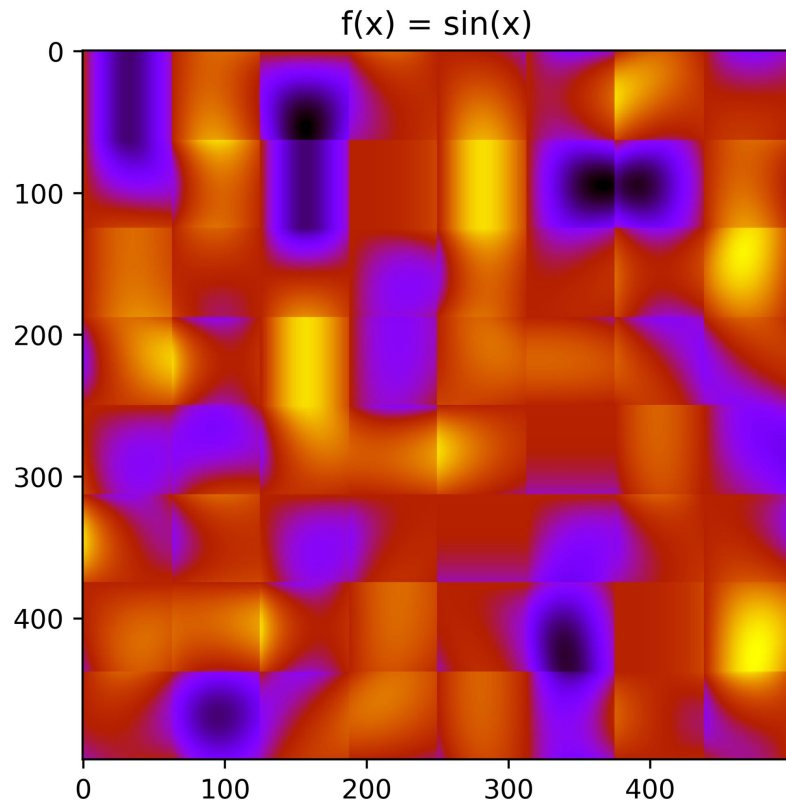




# Noise combination, combining several heatmaps



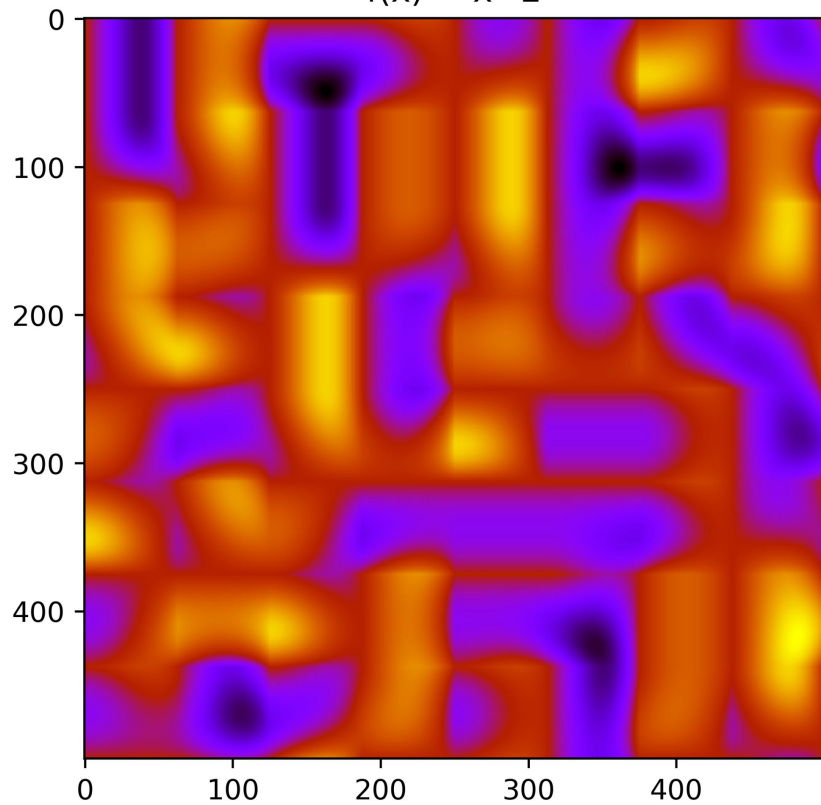
# Value filtering(fading or smoothing)



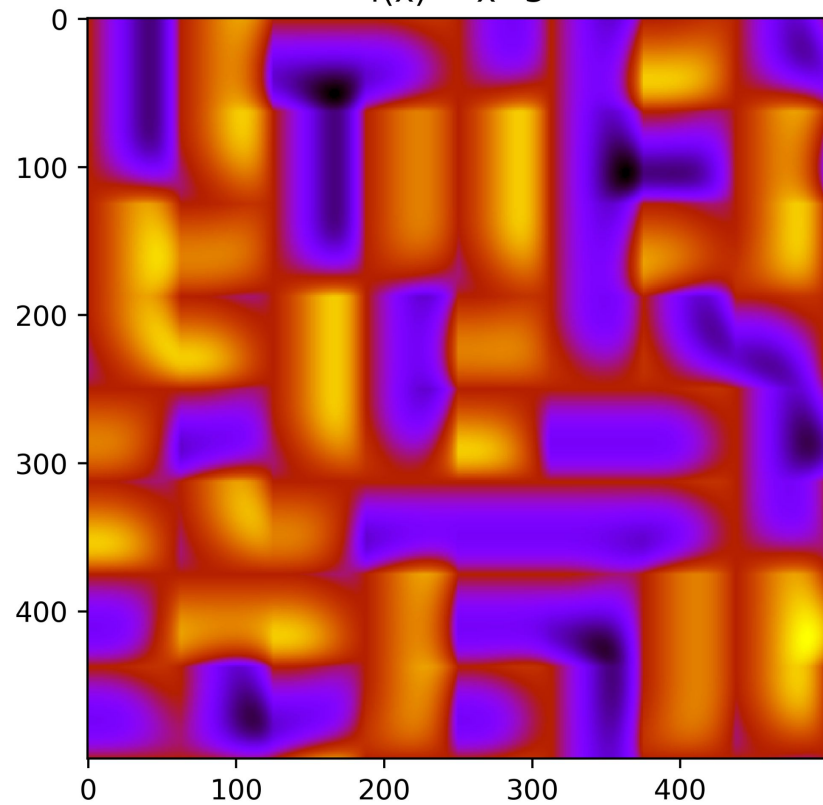


# More filters...

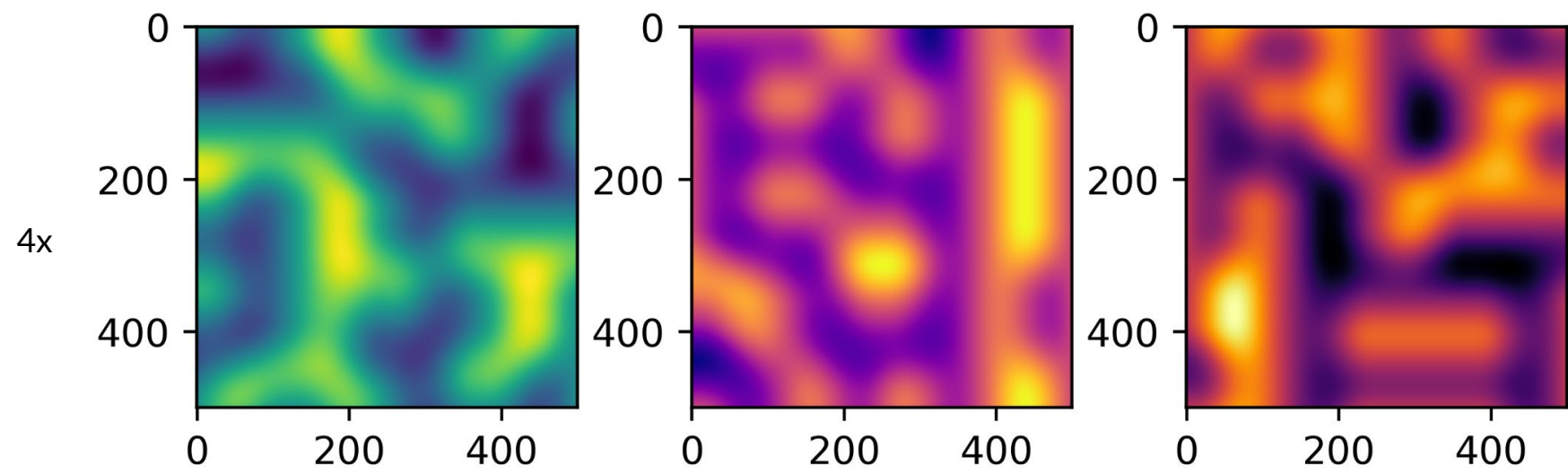
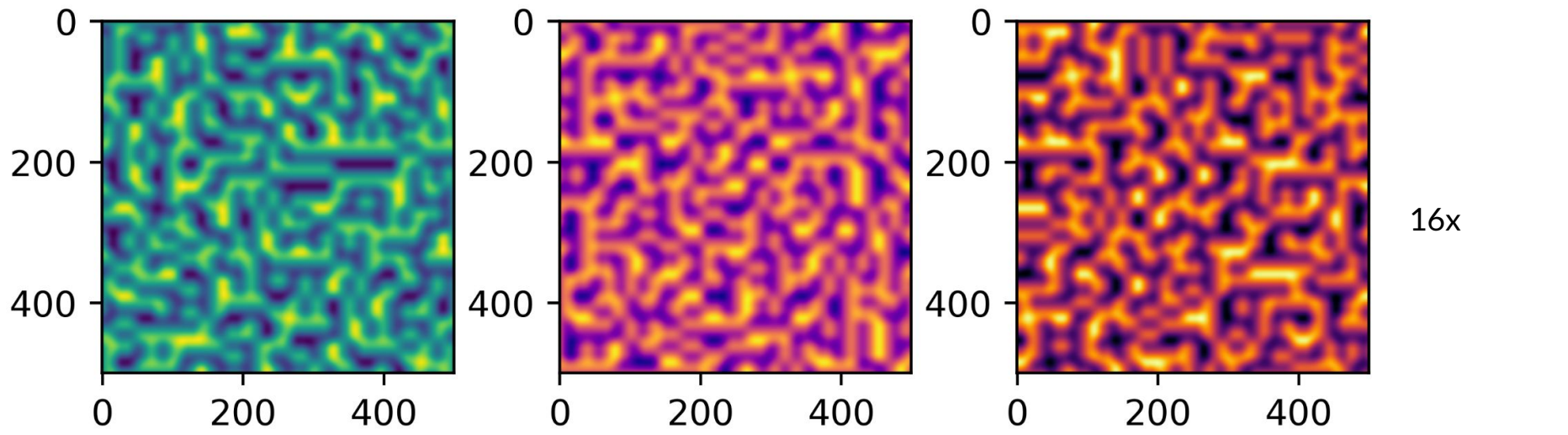
$$f(x) = x^2$$



$$f(x) = x^3$$





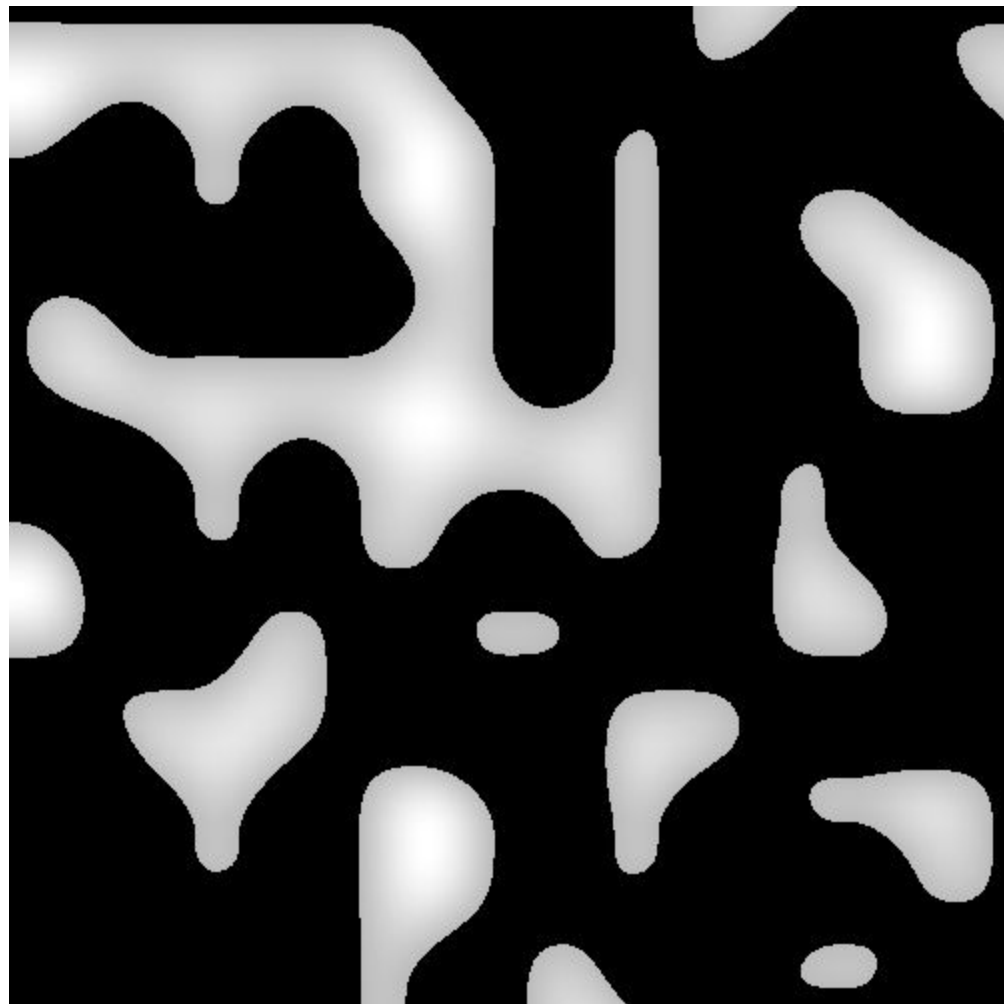
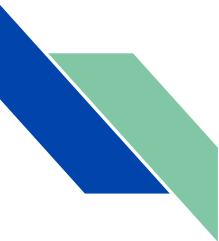




# Map generation



```
hgtMap[hgtMap < 0.55] = 0.0
```



# Perlin worms and cave generation

