

LambDraw und die Zeichenmaschine

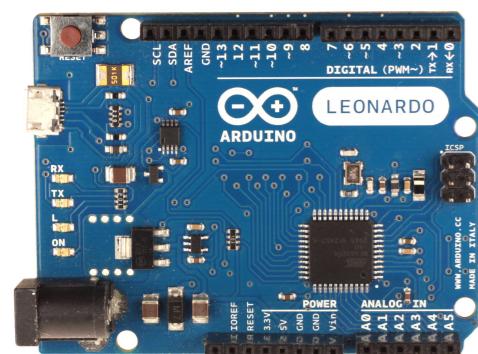
23.03.15

Clemens Niemeyer

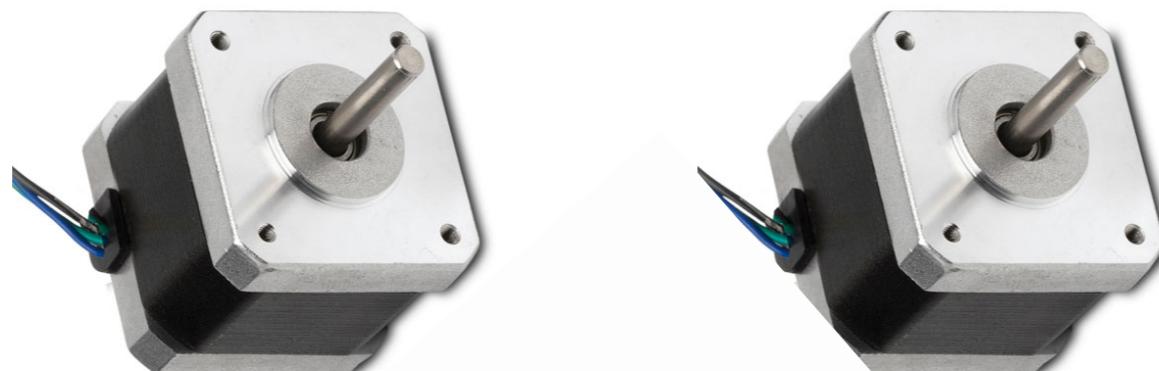
Fortgeschrittene Funktionale Programmierung

Idee - Hardware

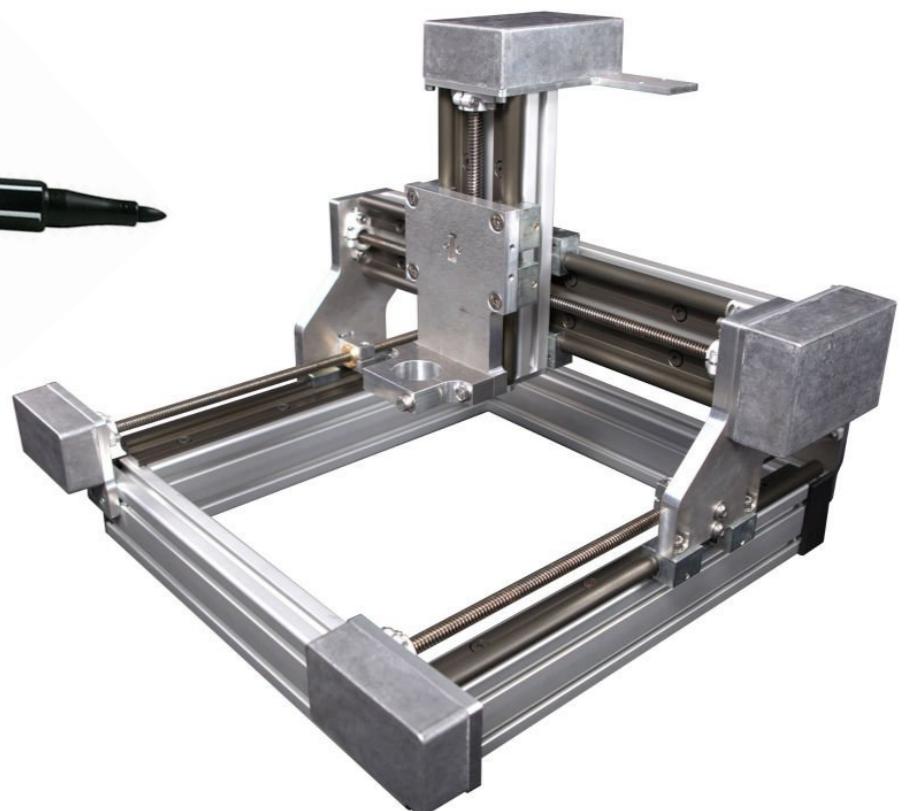
Arduino



Schrittmotoren



CNC Maschine



Filzstift



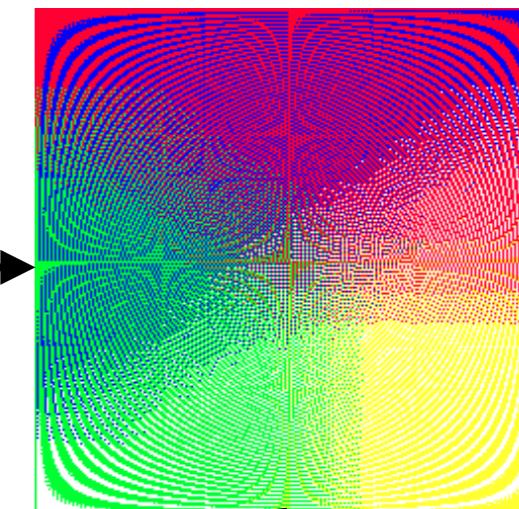
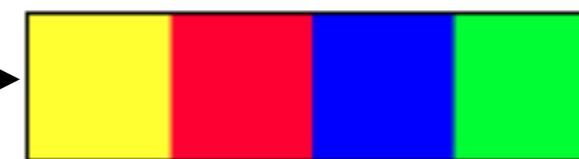
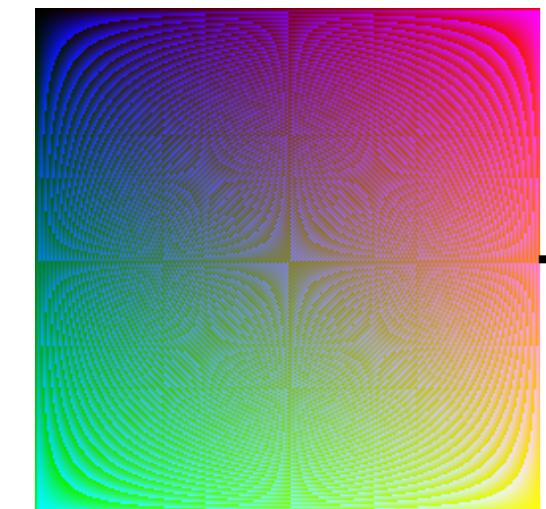
- Pixel-Plotter mit vier Farben

Idee - Software

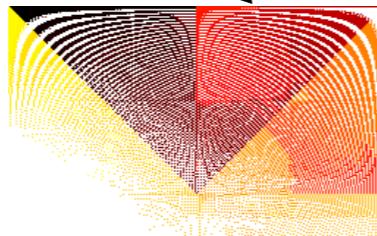
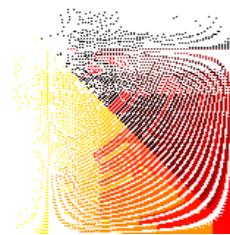
*.png als Input

Palette auswählen

auf Palette reduzieren



Pfad sortieren



aftrennen

in G-Code umwandeln

```
G00 X30 Y00  
M8  
G4 P0.1  
M9  
G4 P0.1
```

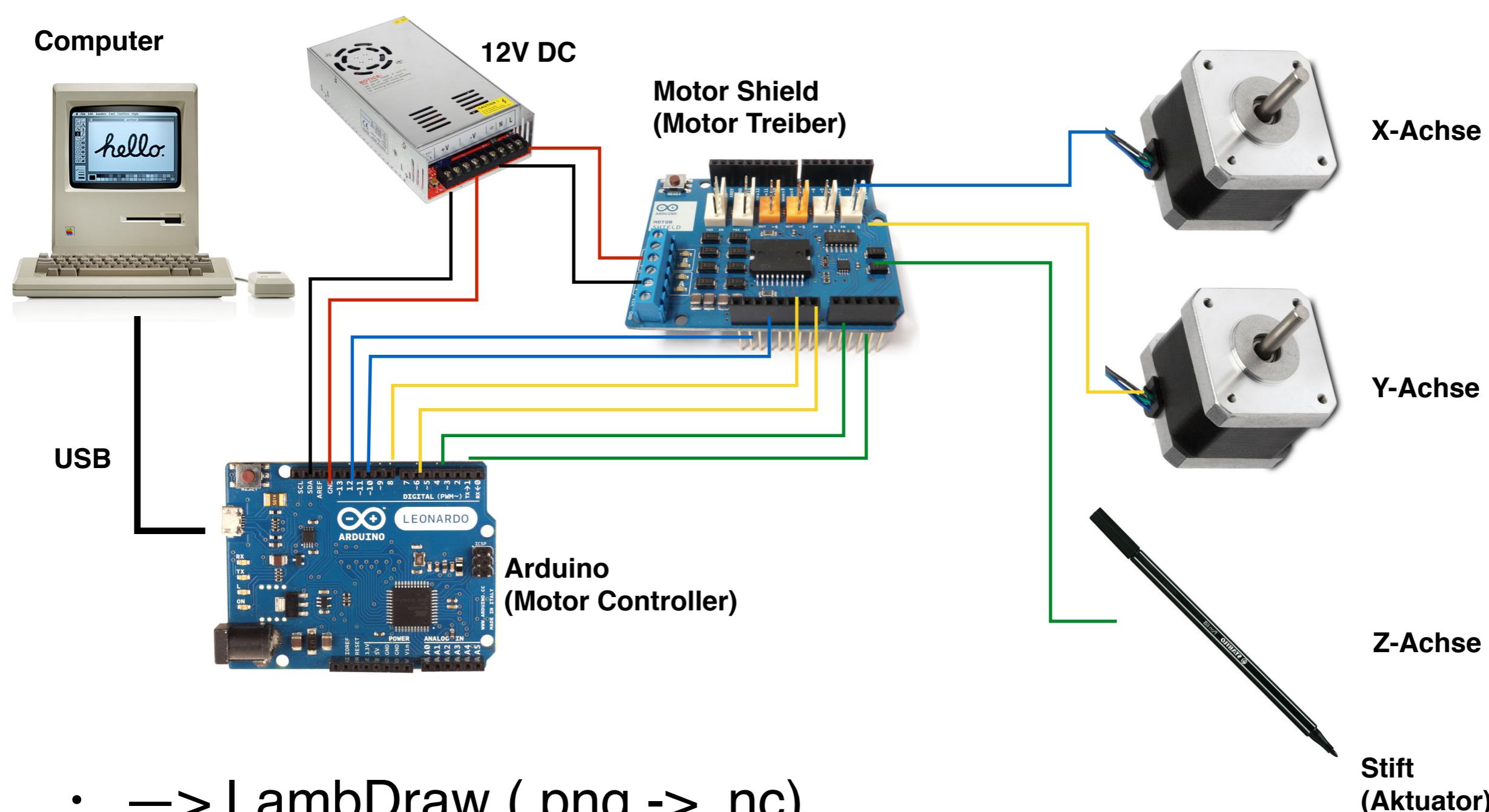
*.nc als Output

Umsetzung- Software

- Bild einlesen und bearbeiten → JuicyPixels Library
- auf Palette reduzieren → generischer Dither
- Parallelisierung → Eval Monade
- Pfad sortieren → StarSort* (TSP in a Grid)
- User Interface → ~~GTK~~ Threepenny GUI

LambDraw

Verknüpfung Hardware-Software



- → LambDraw (.png -> .nc)
- → Grbl-Controller
- → Arduino (grbl) + Motor Treiber
- → Motoren

Live Präsentation

LambDraw in Aktion...