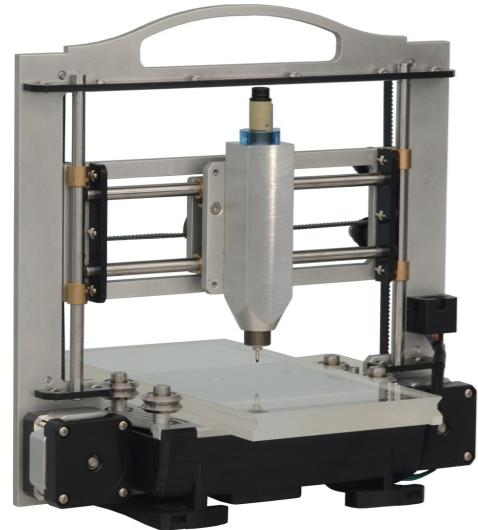


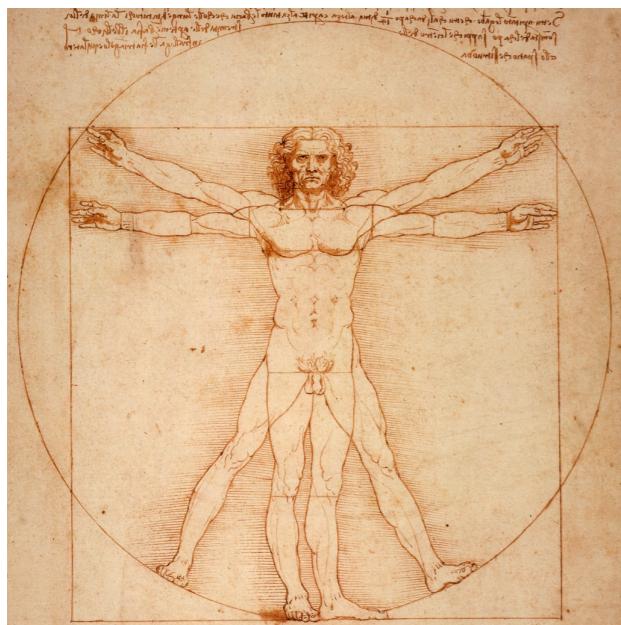
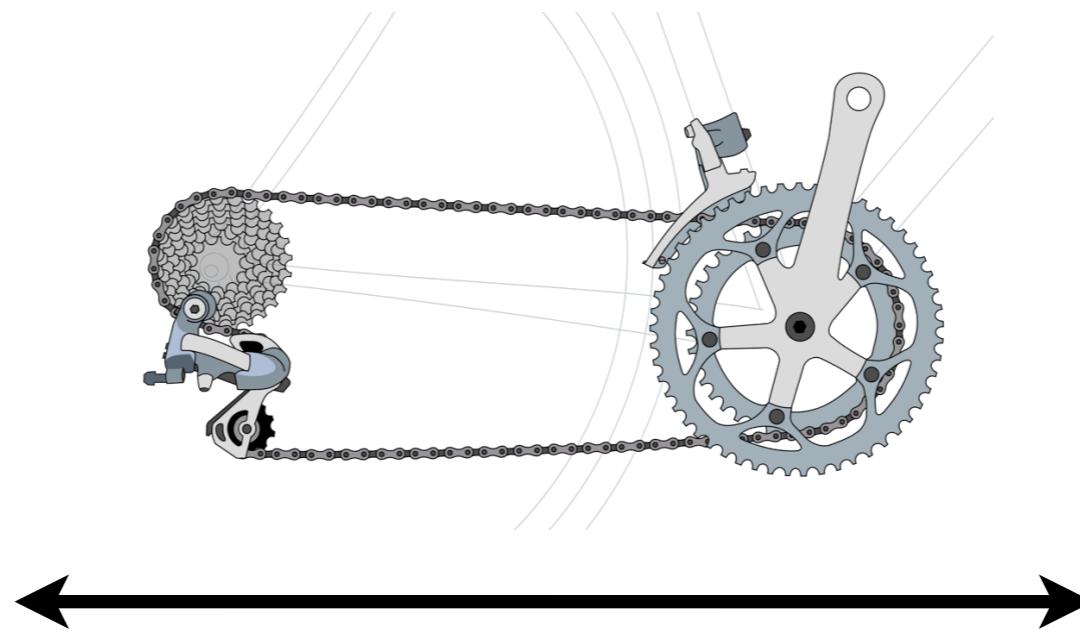
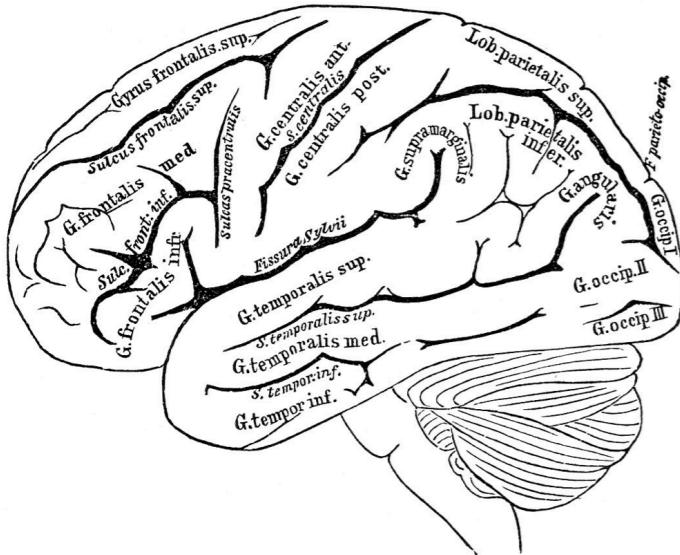


Making Machines That Make

Ilan E. Moyer

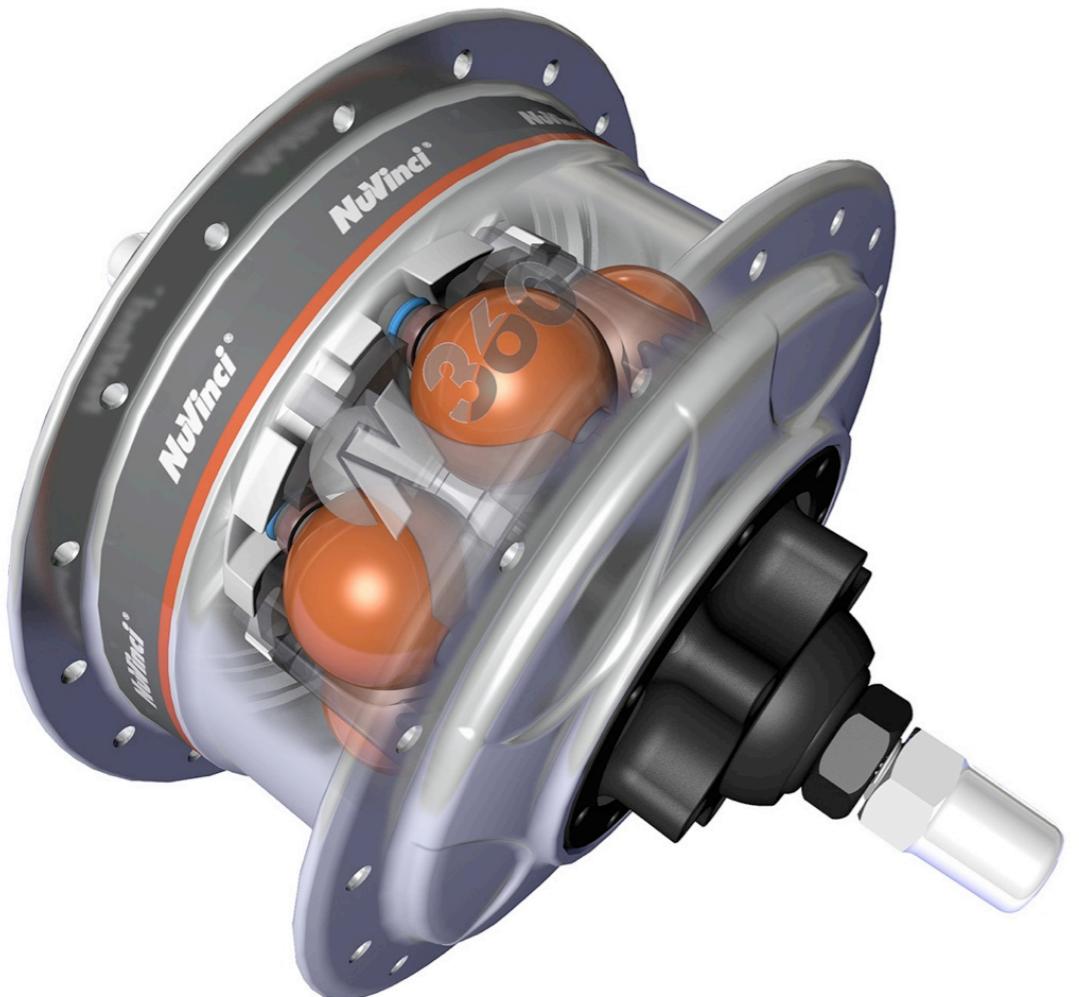


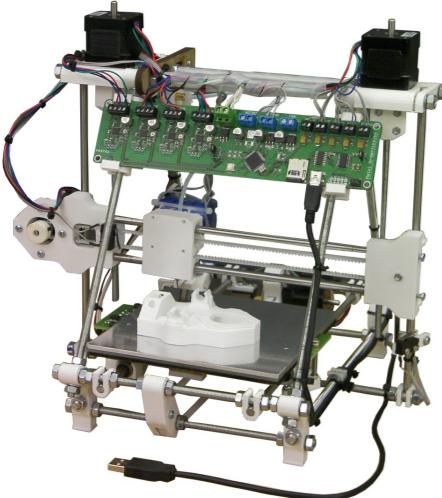
Tools Are Transformers...



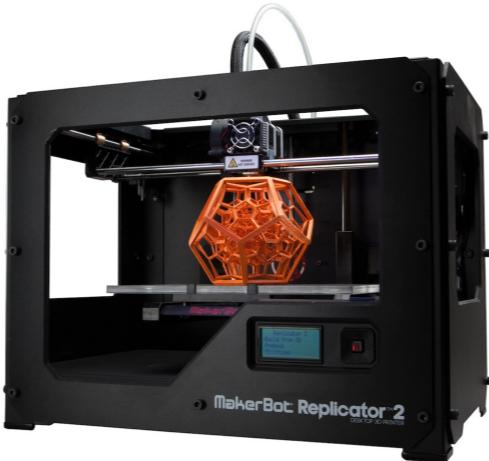
NuVinci Continuously Variable Transmission

Universal Tool





RepRapPro Huxley



Makerbot Replicator 2



Dimension 3D Printer



MTM Multifab



Roland Modela



Haas Mini Mill



Lasersaur

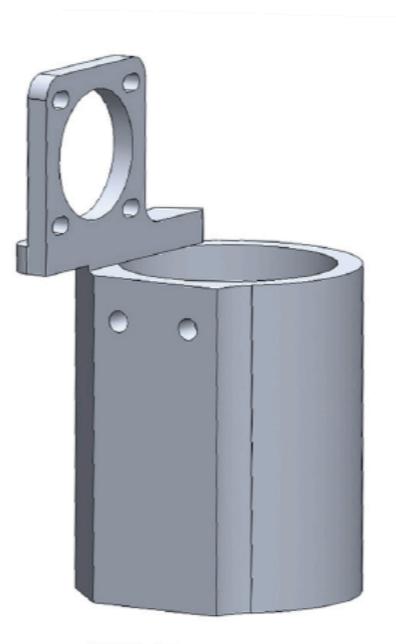
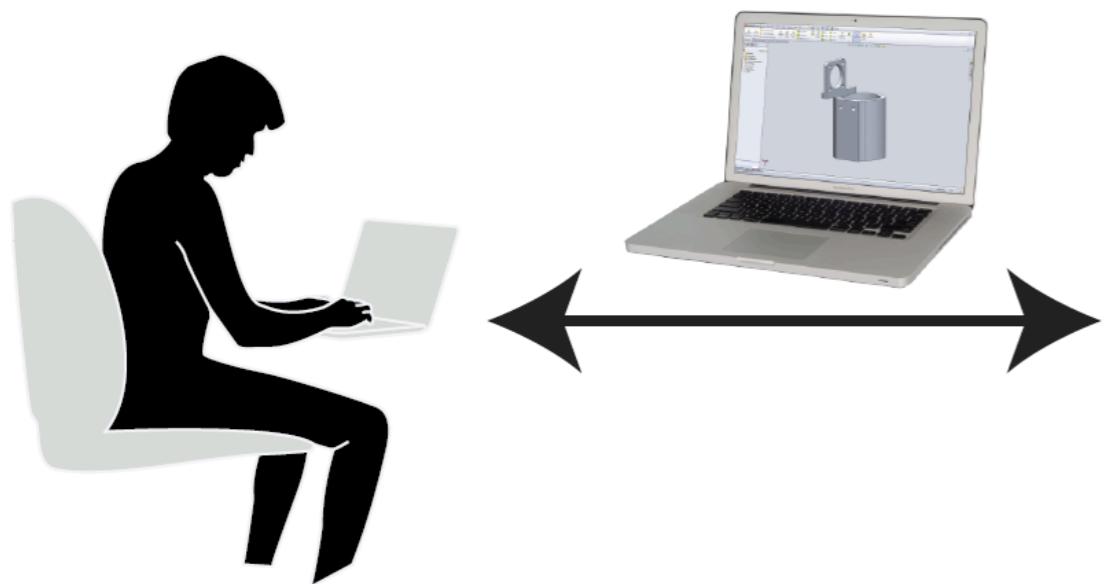


Epilog Laser Cutter



Omax Waterjet

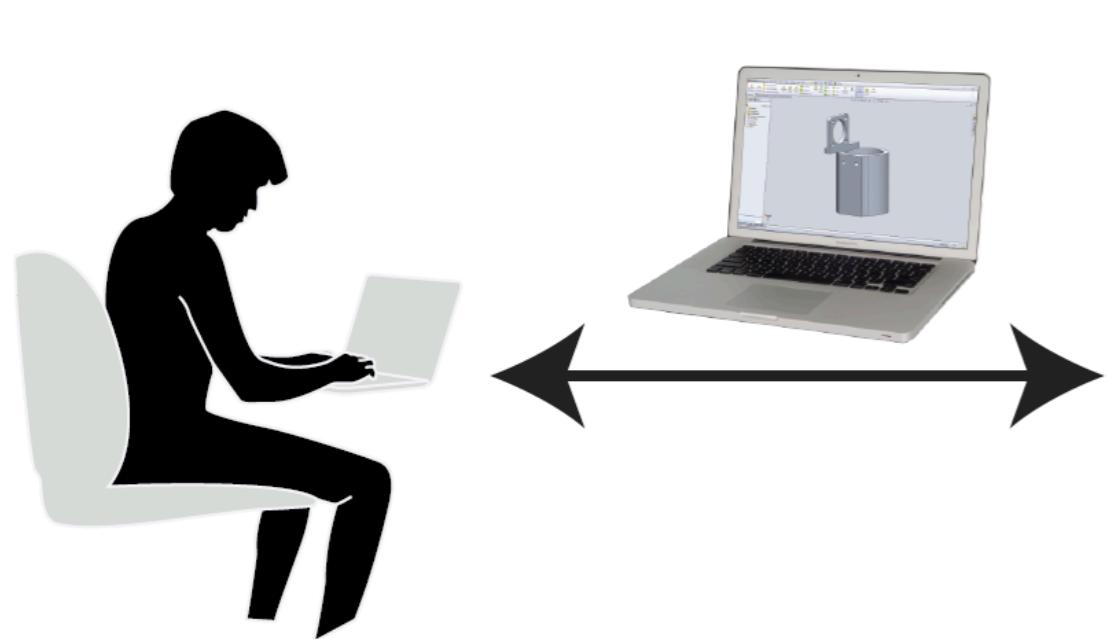
Digital Design



Digital Fabrication

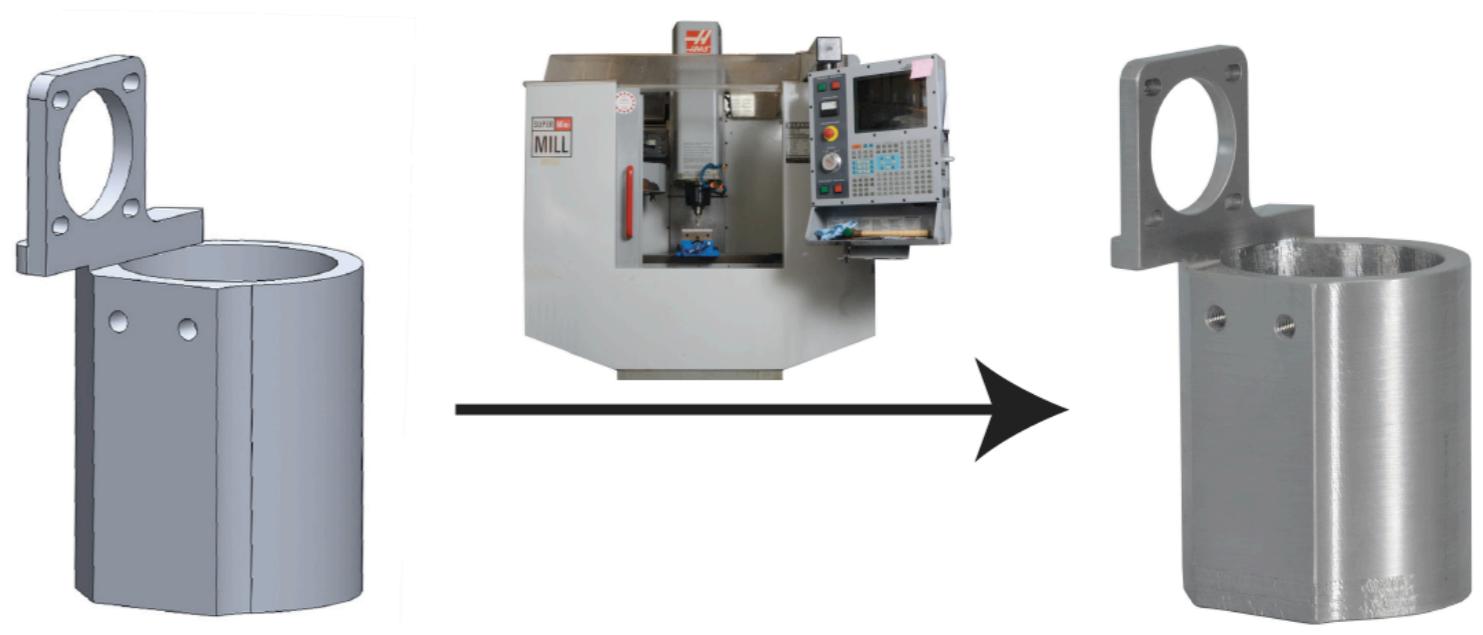


Digital Design



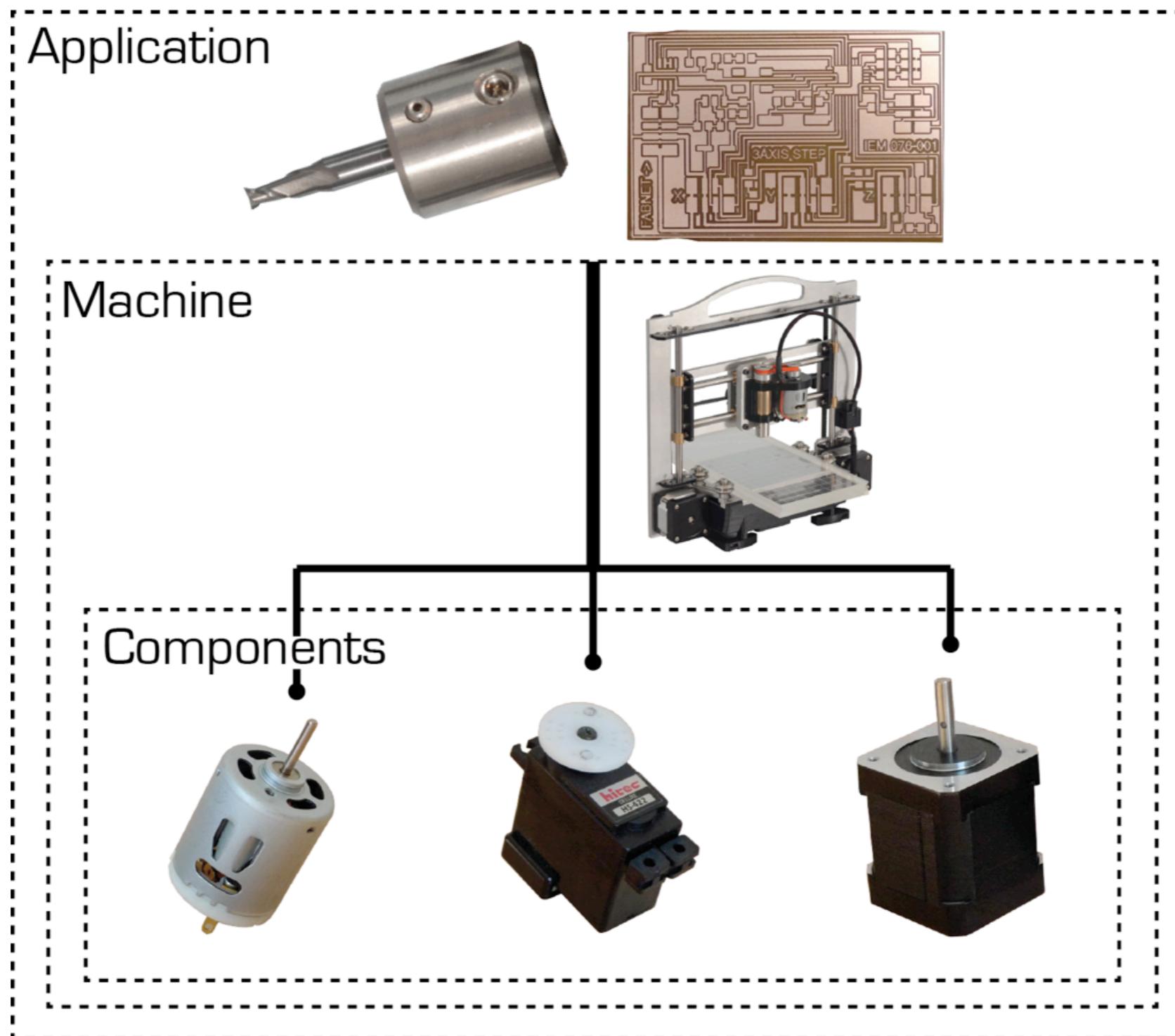
- Ubiquitous computers
- Accessible design tools
- Framework in place for extension of capabilities

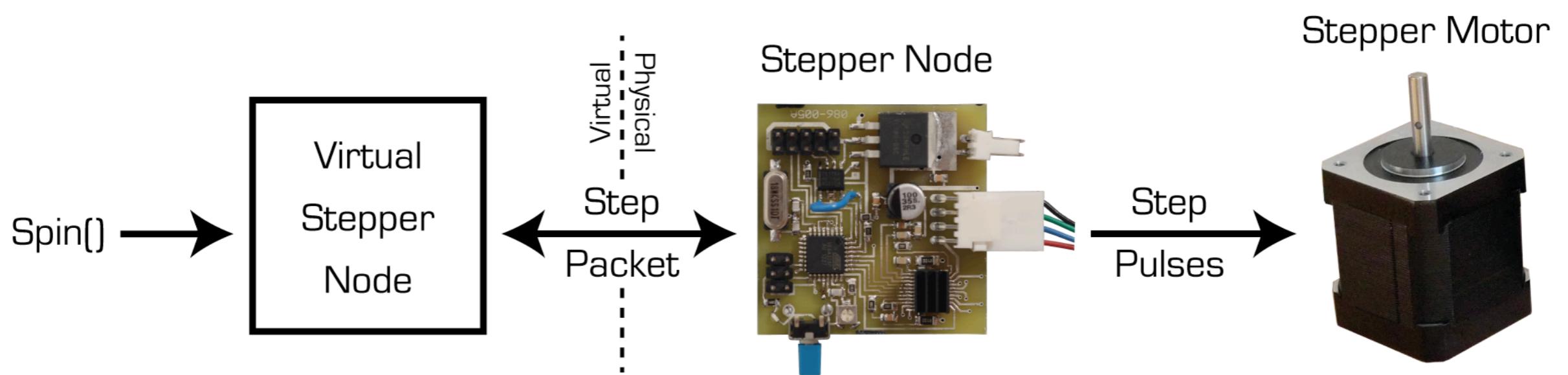
Digital Fabrication

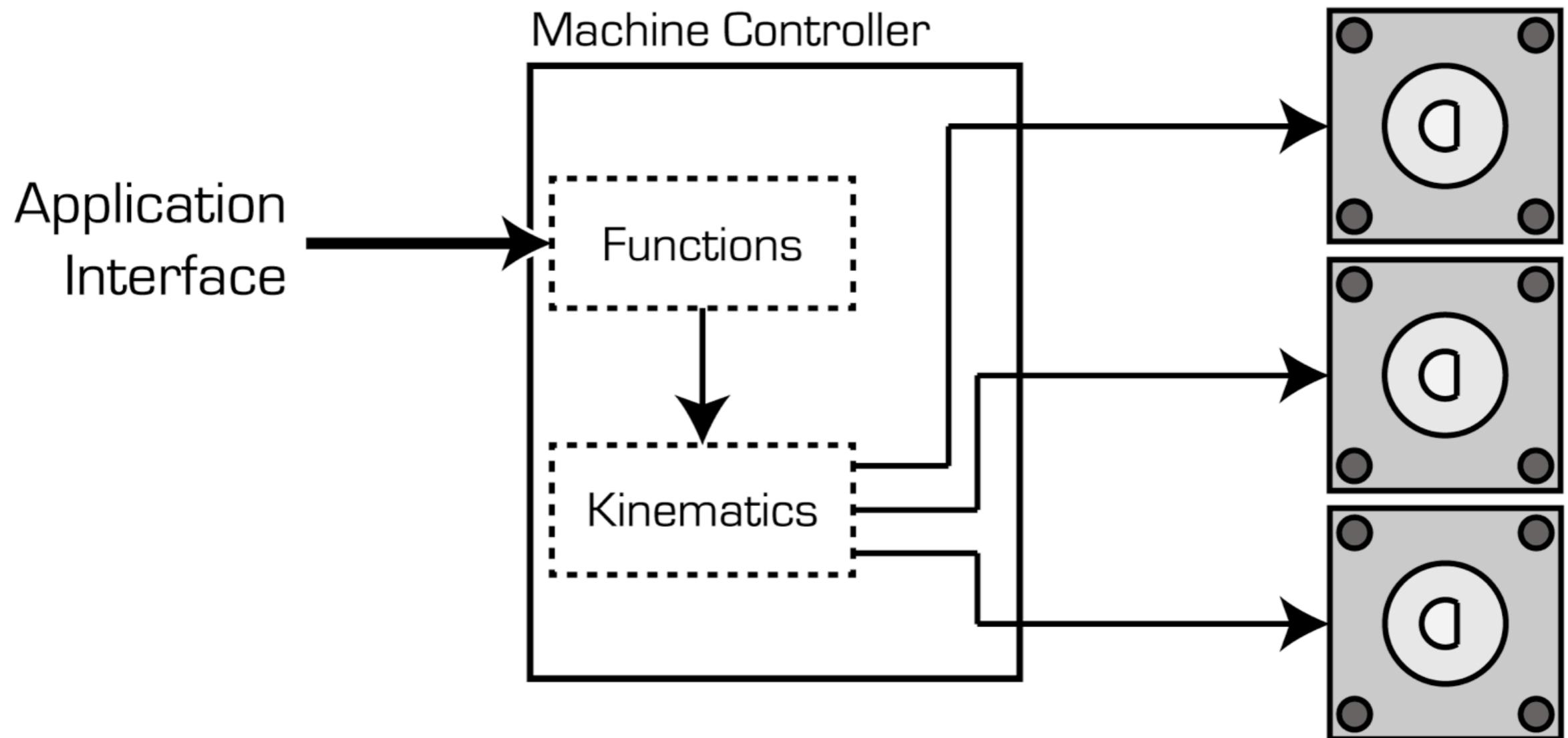


- Scarce and limited toolset
- Generally closed designs
- No existing framework for modular development of new tools by individuals

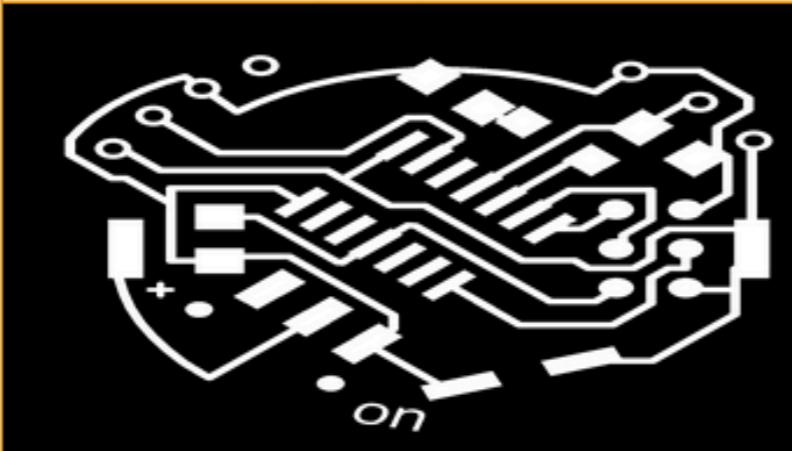
Gestalt: A Framework for Controlling Digital Fabrication Machines







Mill Top Layer Traces



Invert

Contouring

Finishing Diameter: inches

Contour Passes:

Depths

Cutting Depth: inches

Traverse Height: inches

Depth Passes:

Speeds

Plunge Speed: inches/min

Retract Speed: inches/min

Traverse Speed: inches/min

Mill Speed: inches/min

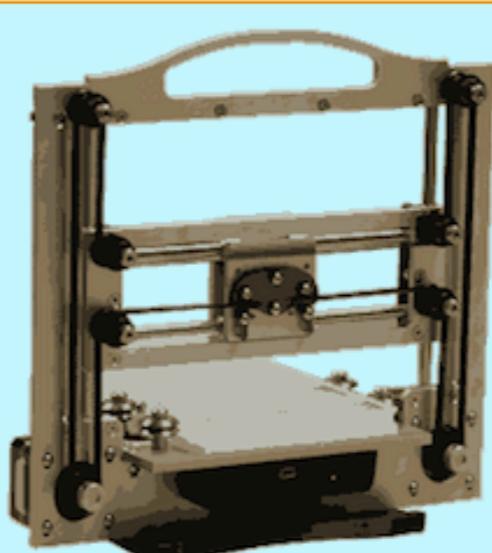
Generate Toolpaths

Output Format:

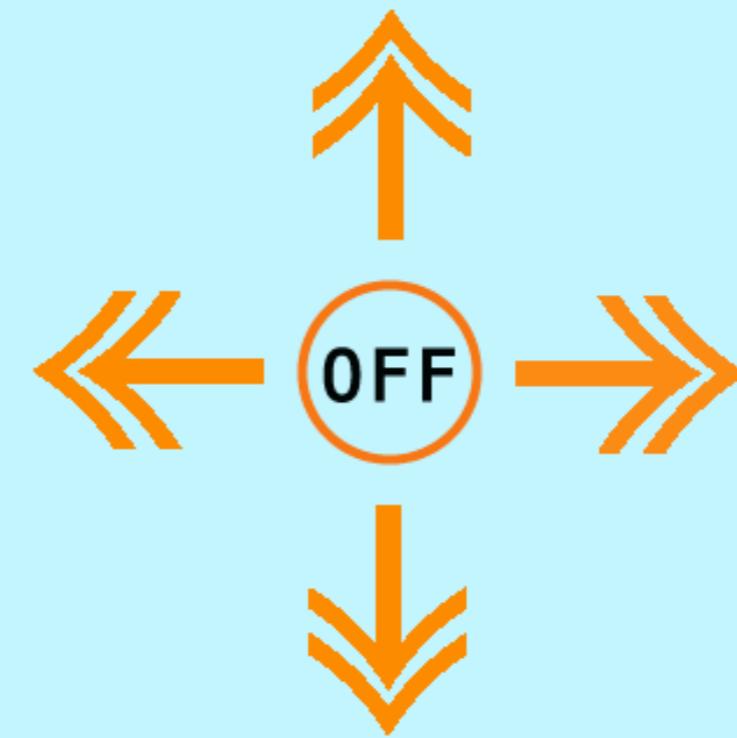
generate

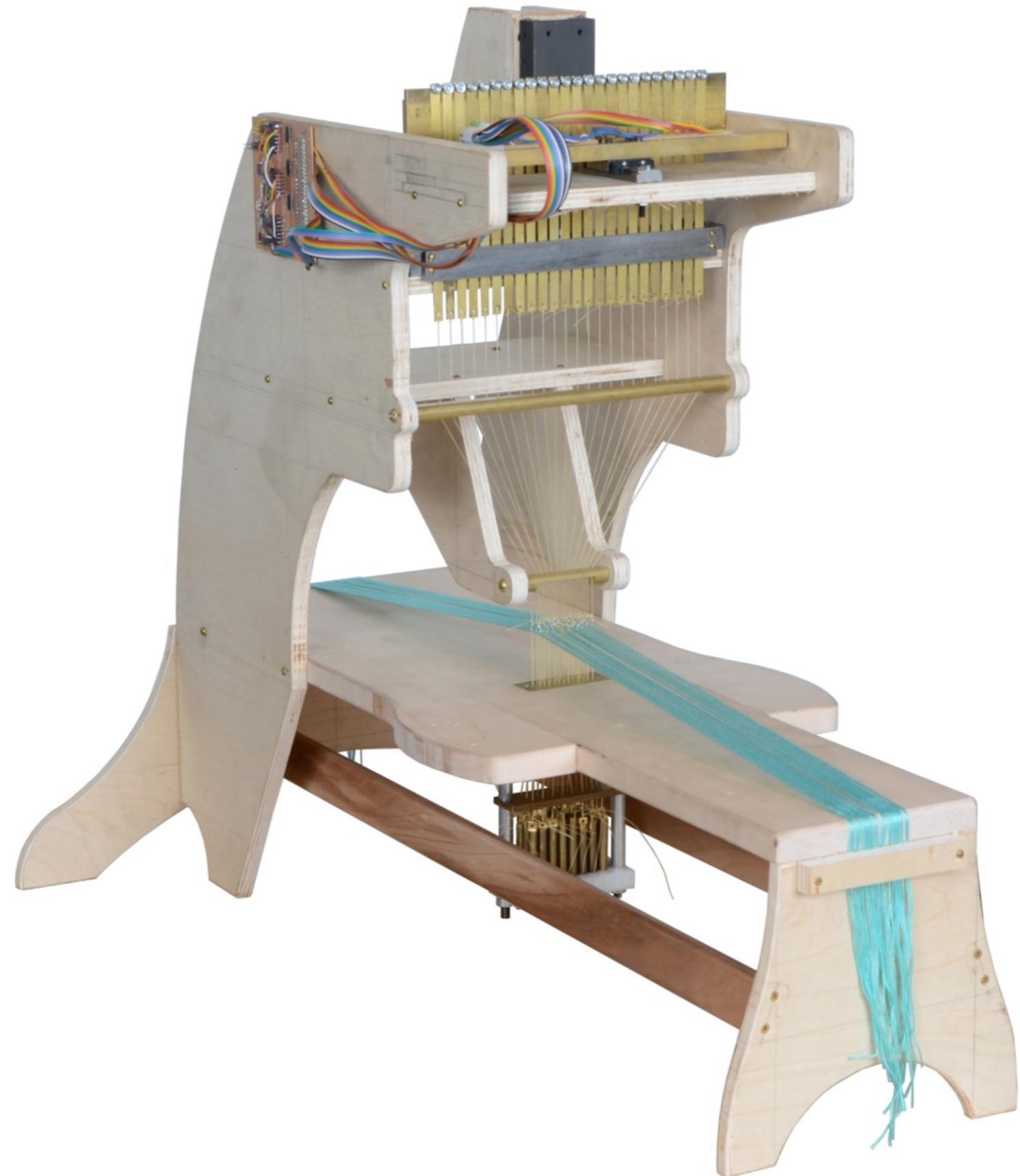
hello there :-)

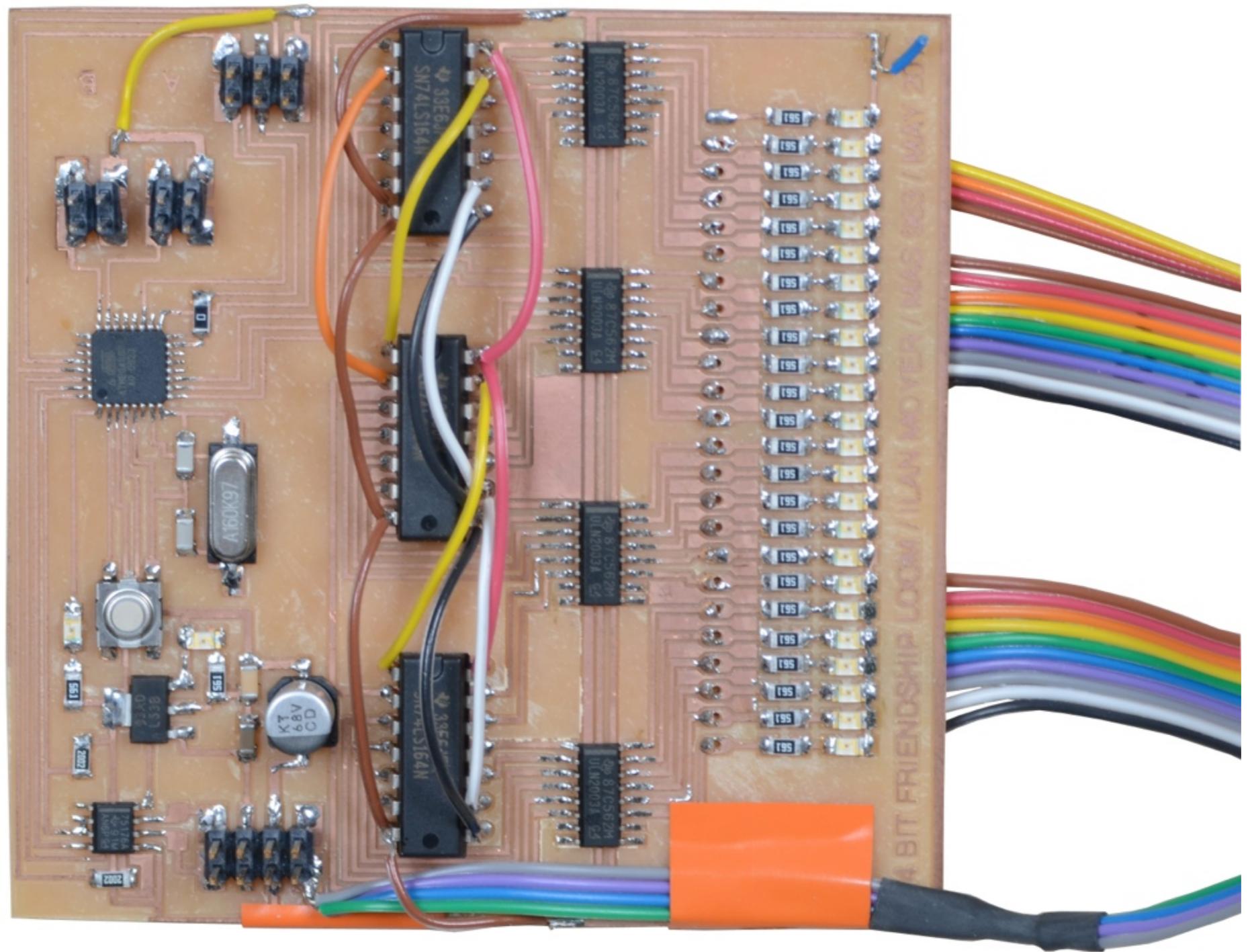
Machine Control

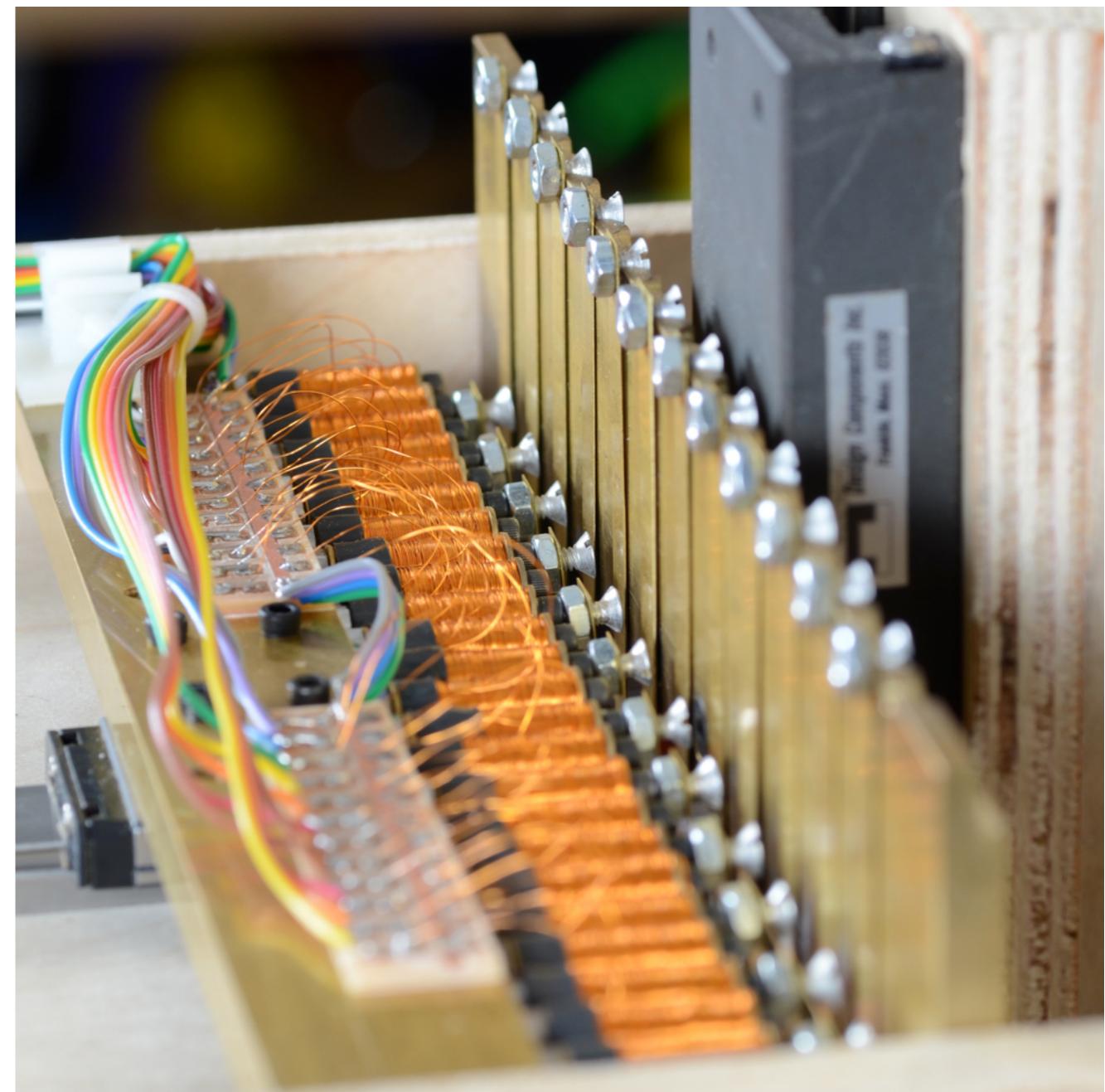


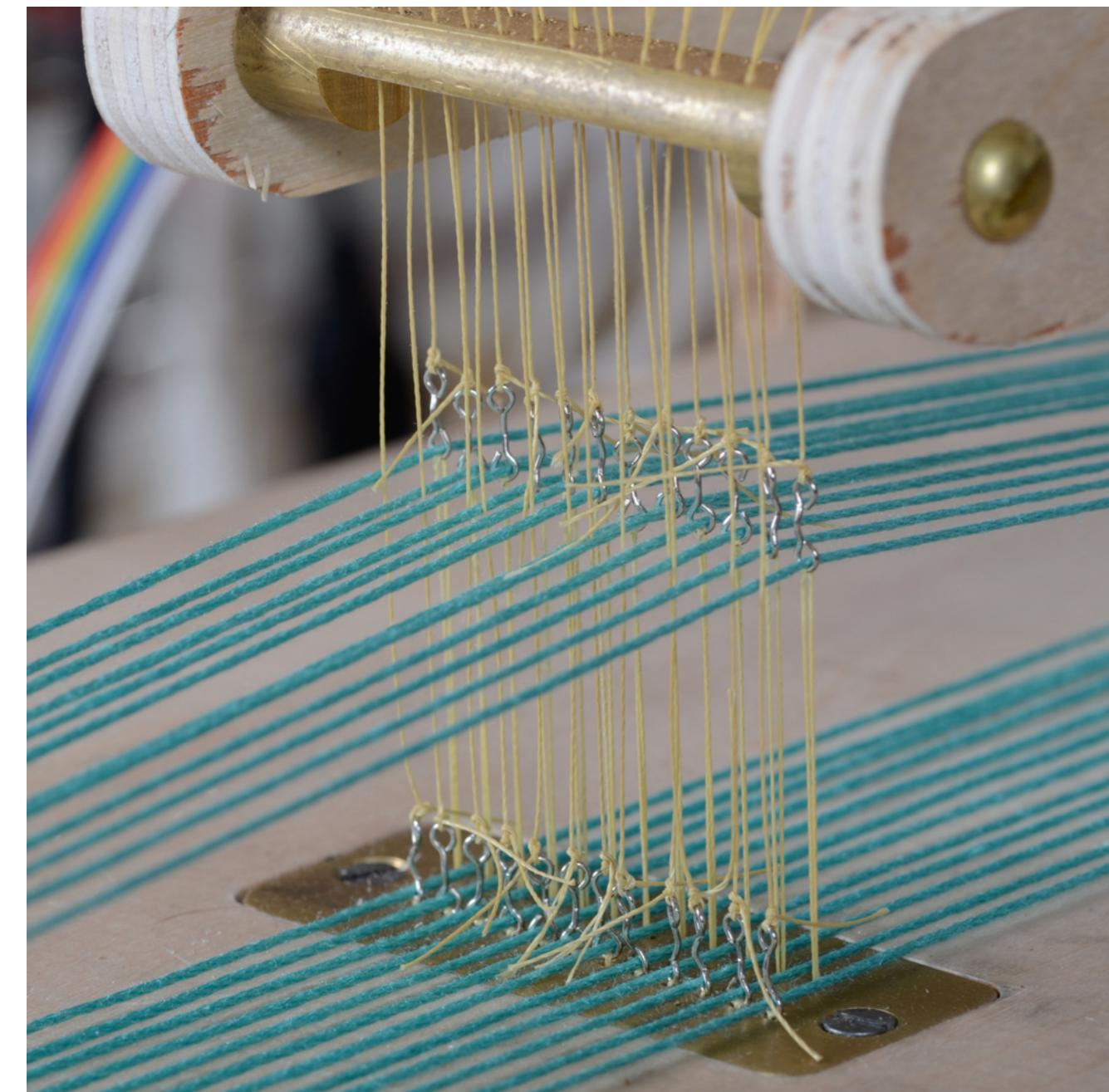
X 0.00 mm zero
 Y 0.00 mm zero
 Z 0.00 mm zero





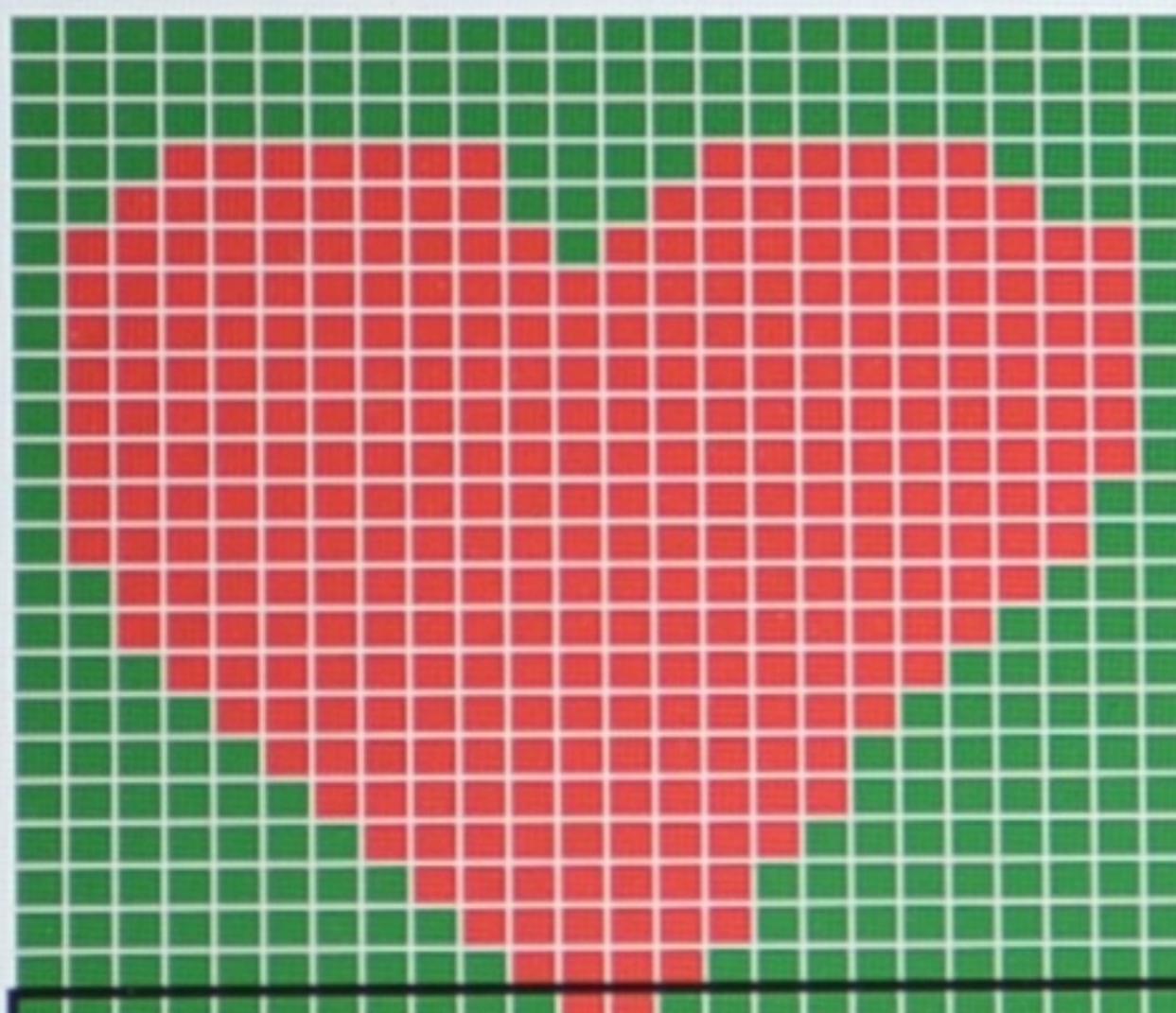






24-BIT FRIENDSHIP LOOM

Pattern Design



Warp:



Weft:

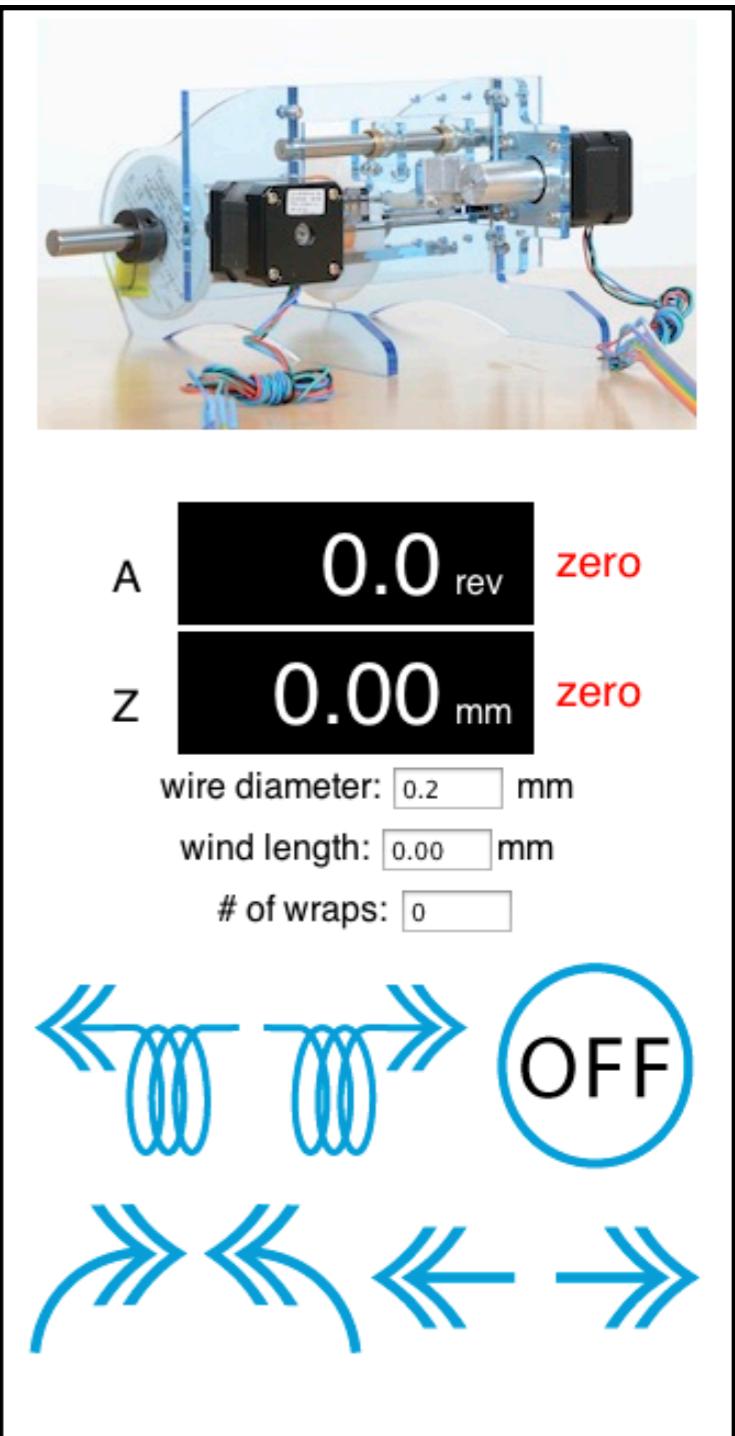
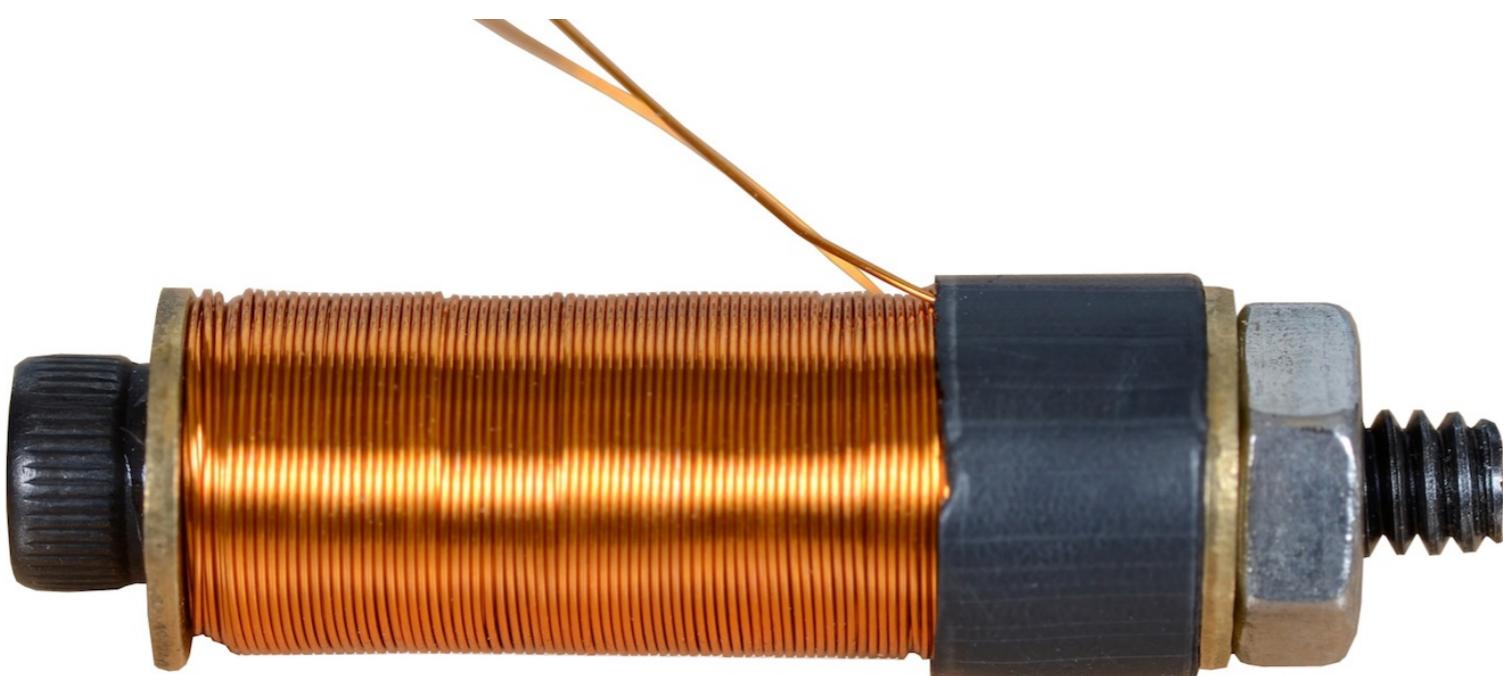
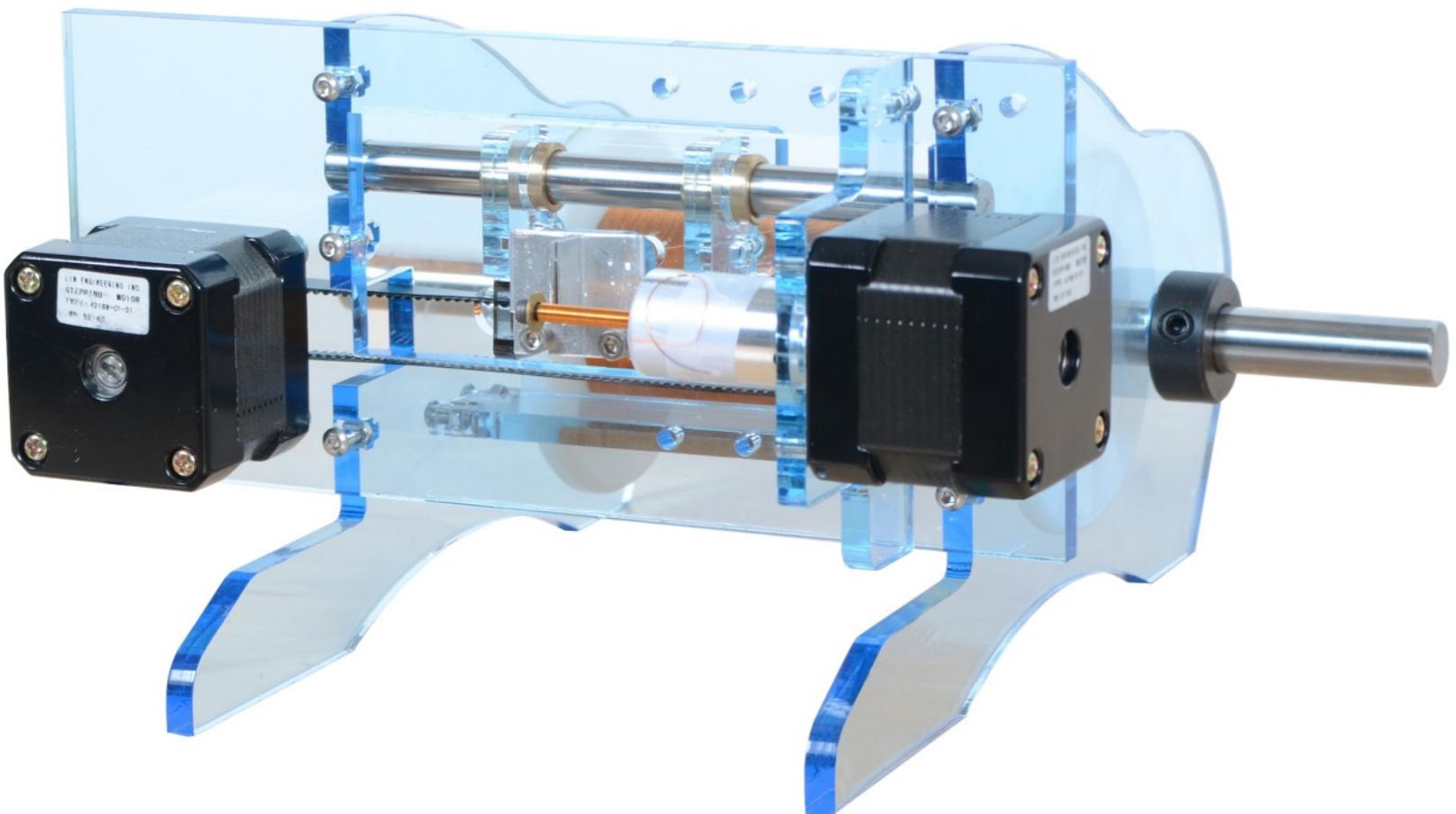
[more rows](#)

Loom Control

Kiss Screws with Magnets



Restart



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www.pygestalt.org