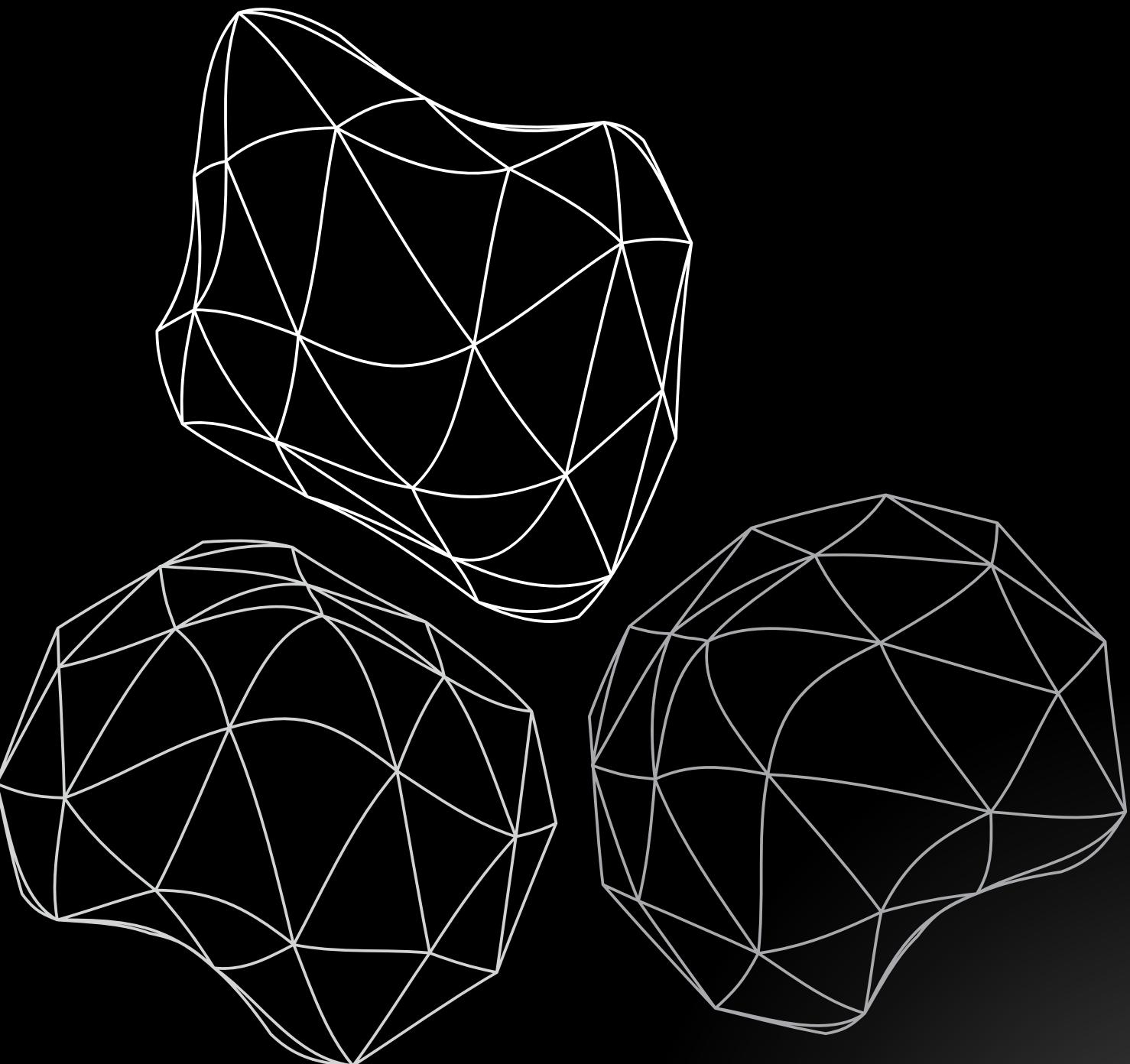


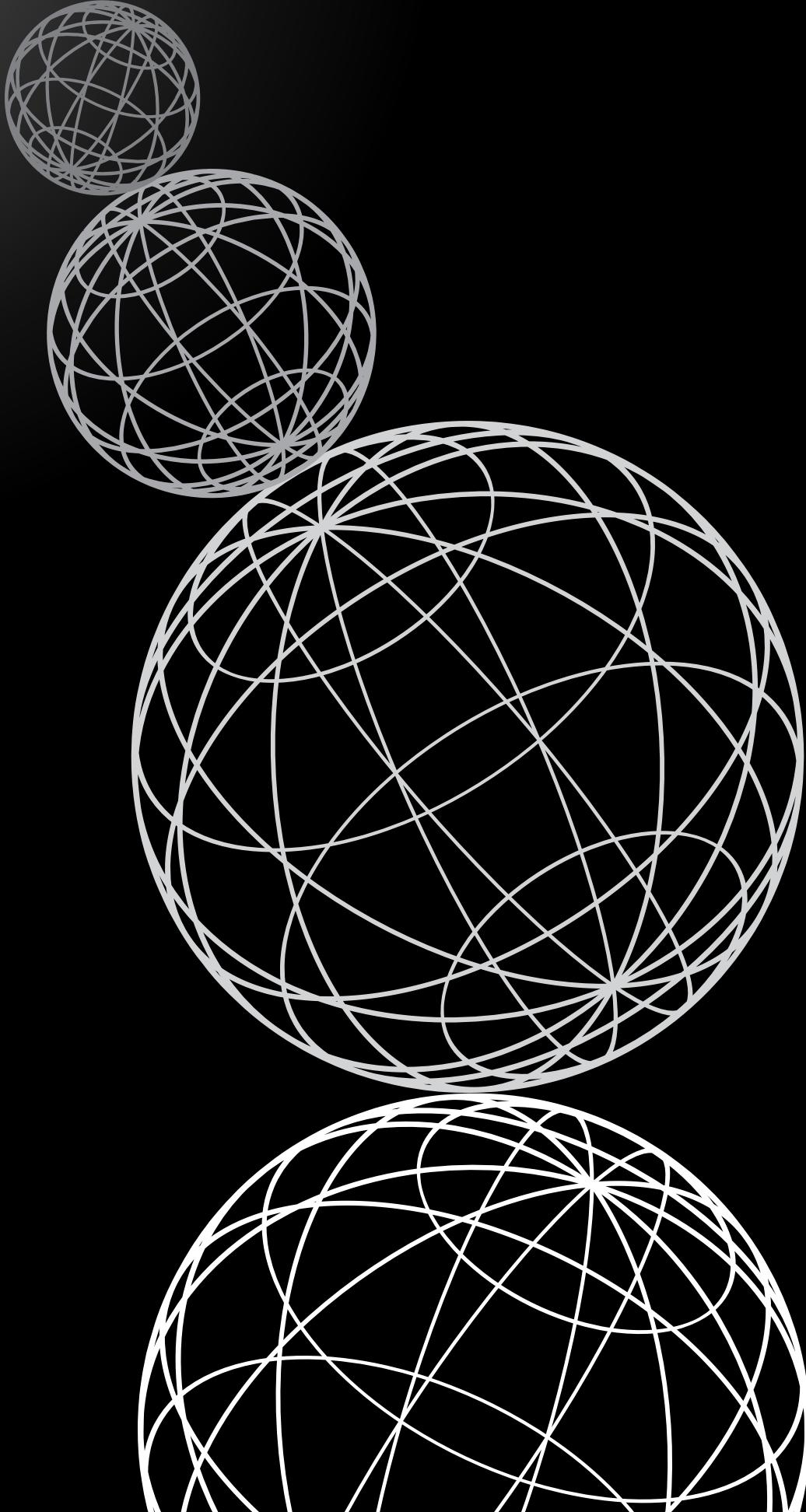


TEAM ROBOSKY

BACKGROUND

Problem Statement: For many beginners, PCB design can feel overwhelming, especially when it comes to turning circuit diagrams into machine-readable layouts.

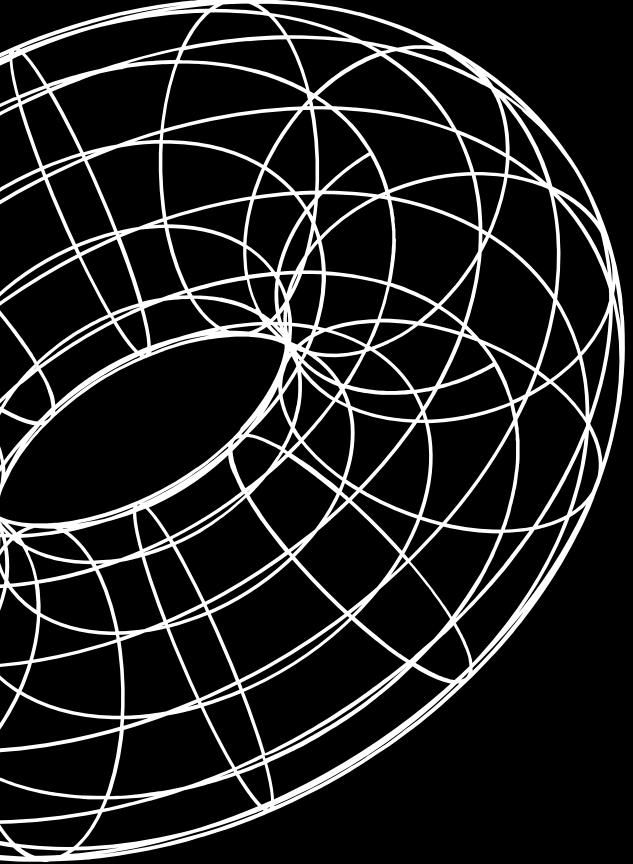




POSSIBLE SOLUTION

Automate PCB designing process by converting sketched circuit diagram into machine-readable PCB layouts

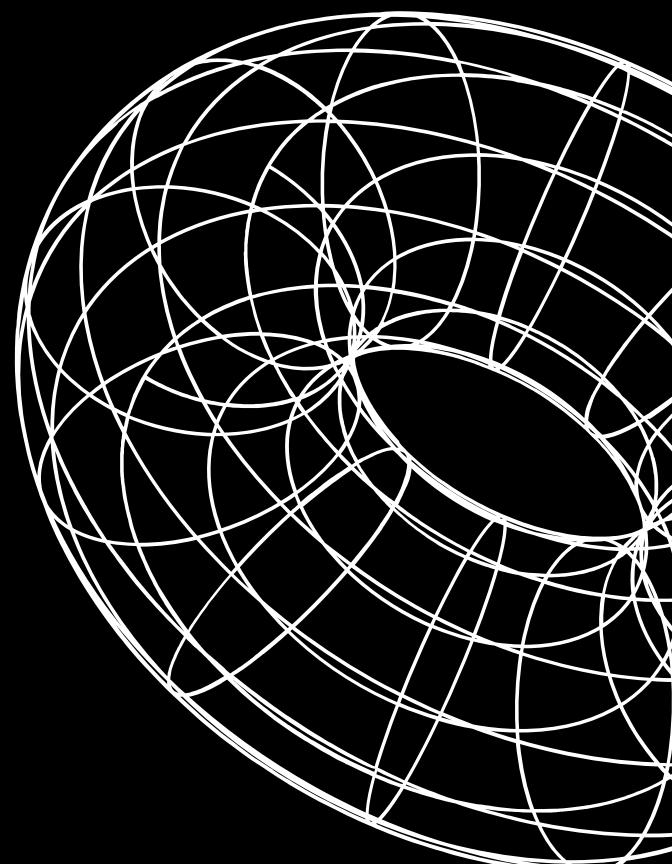
BUT HOW..?



That's where

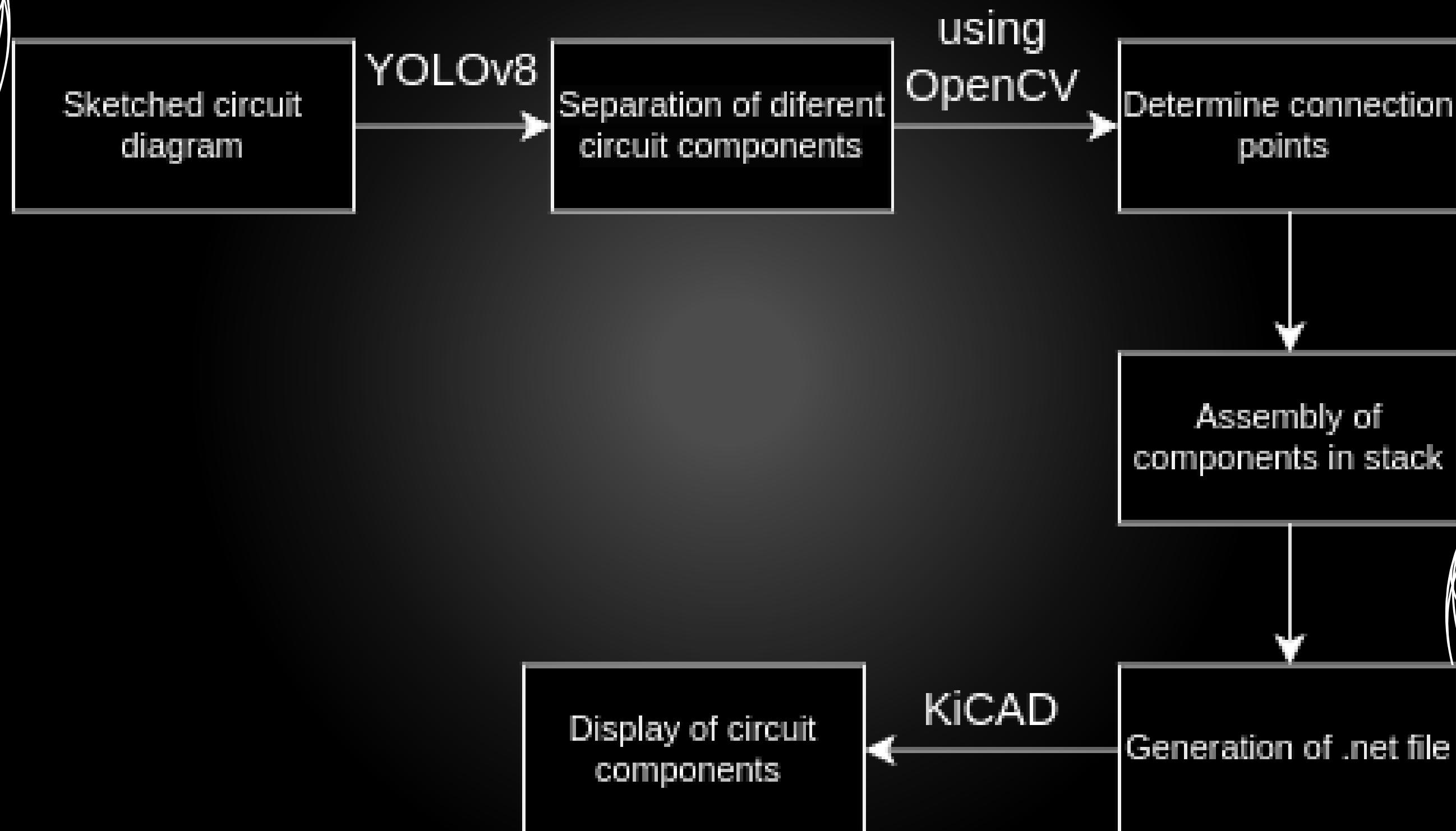
SKETCH2PCB

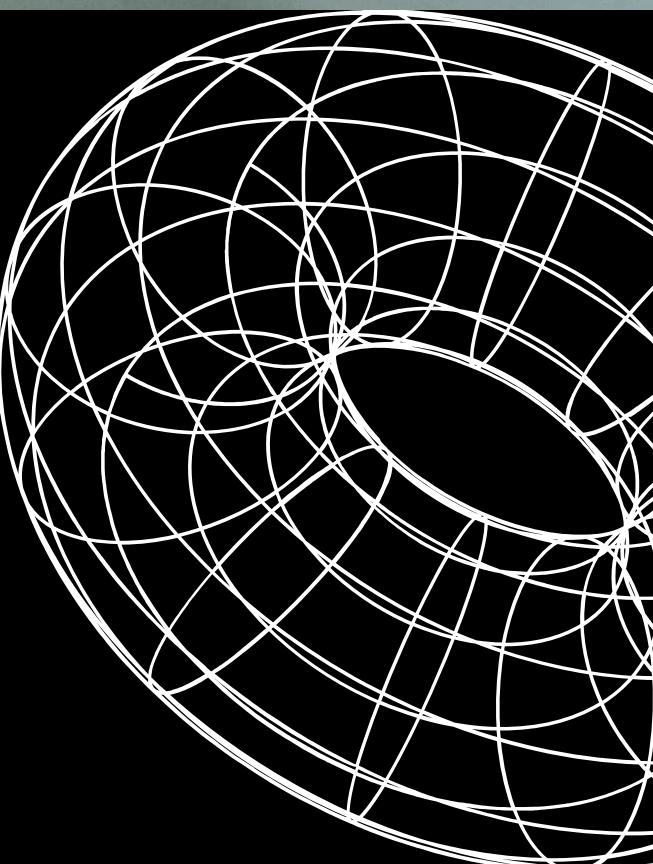
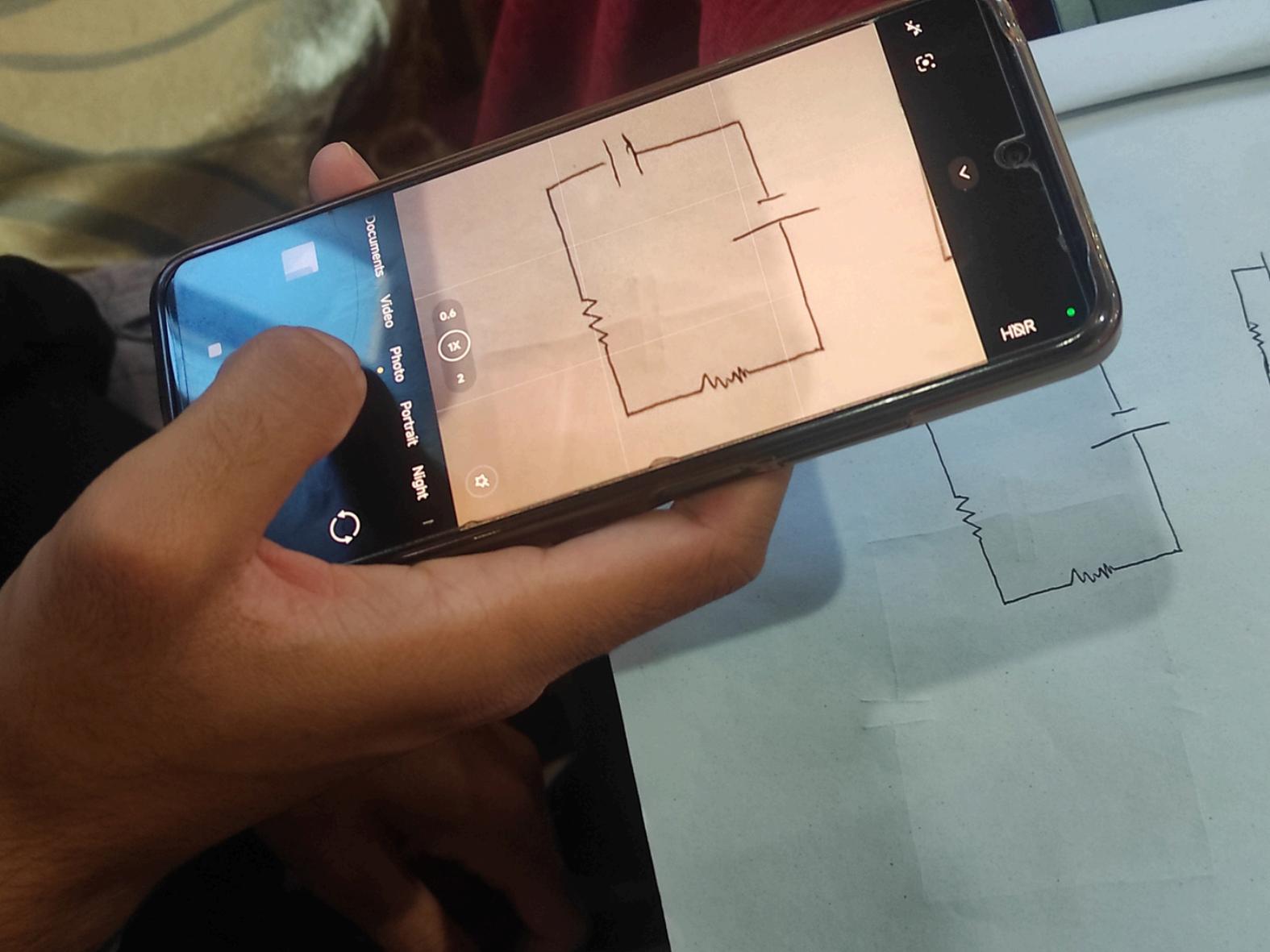
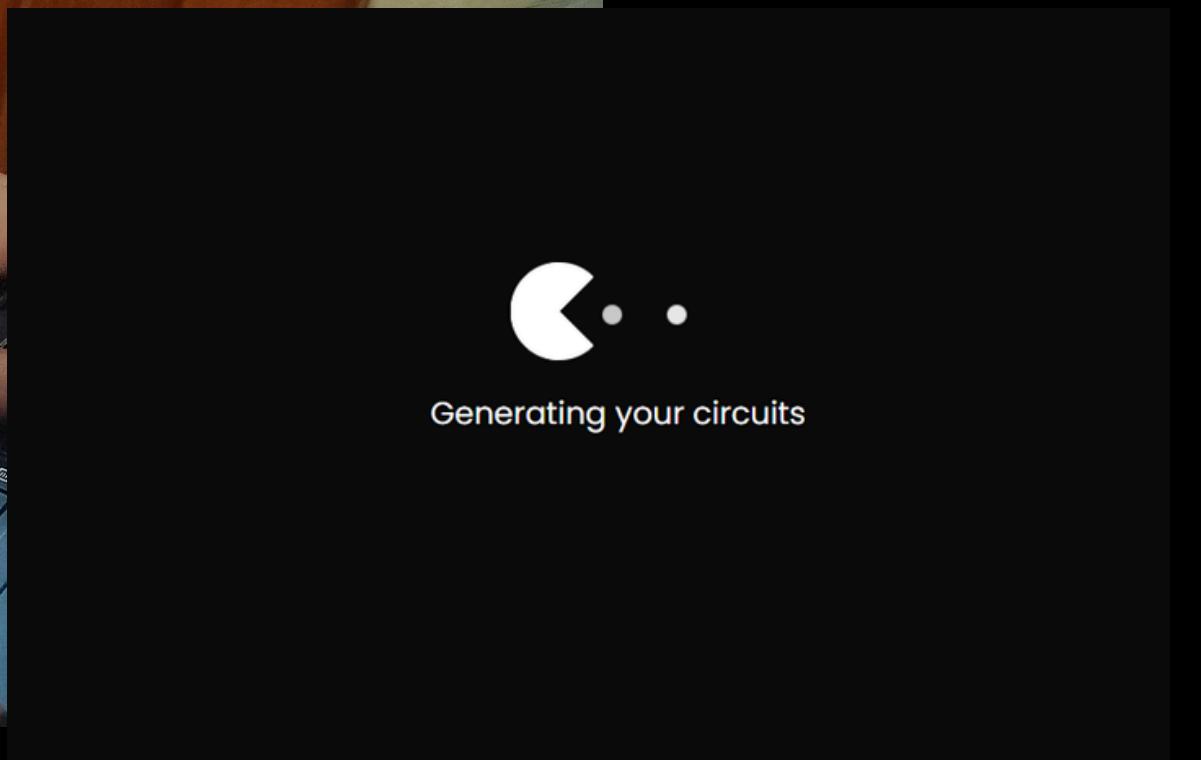
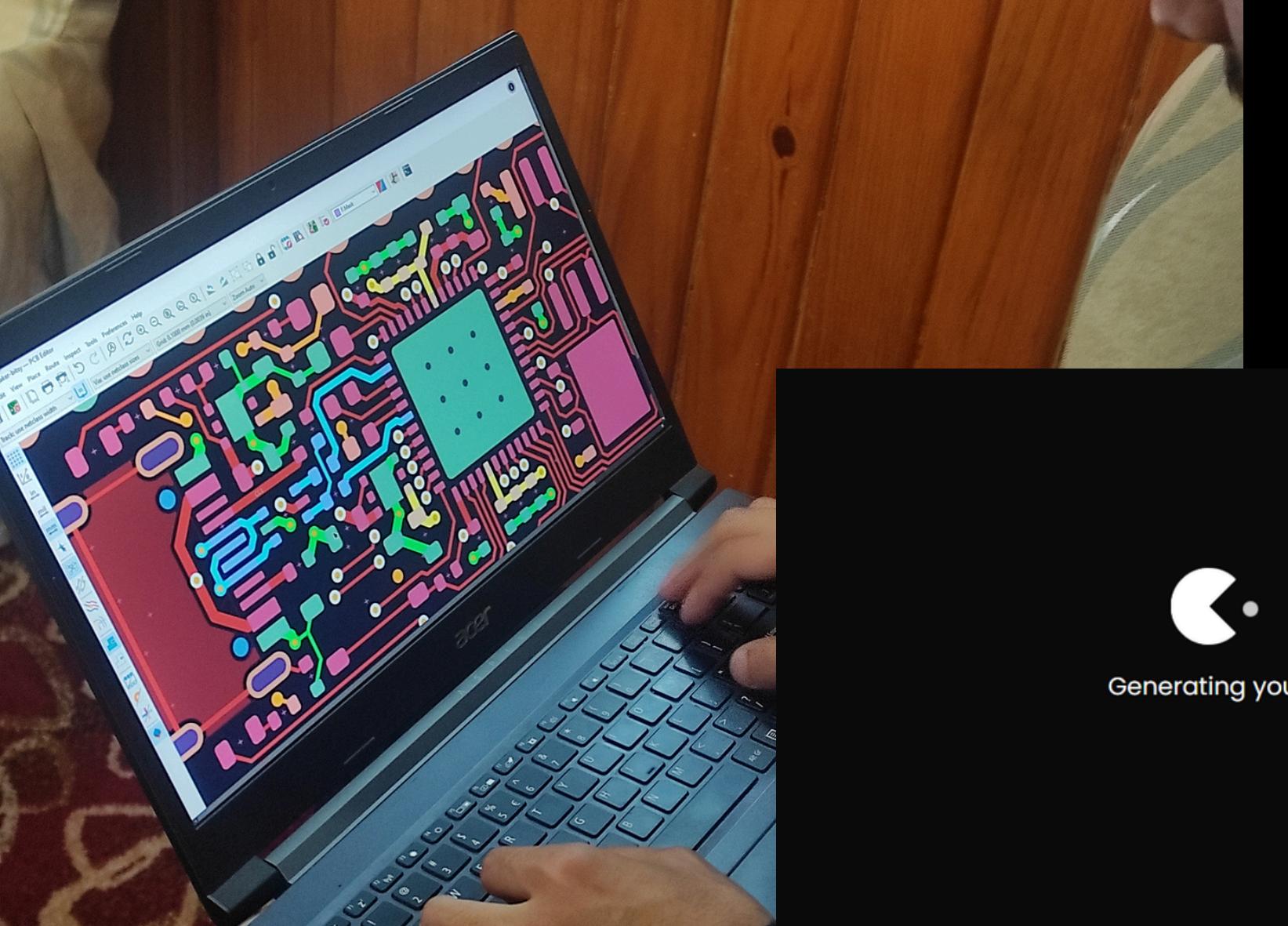
comes to play

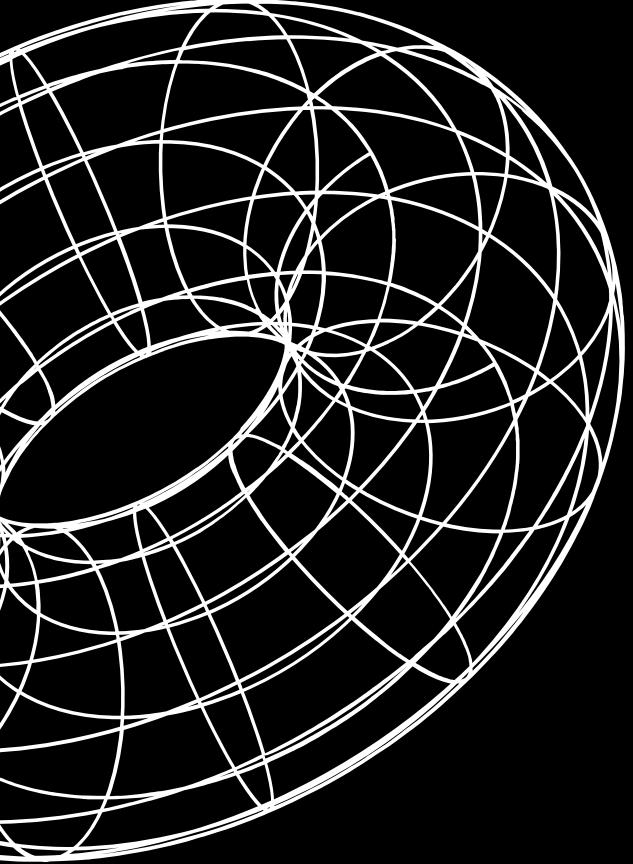


SKETCH2PCB utilizes Computer vision model **YOLO** to detect components of a circuit in the sketch and after image processing “.net” file is returned as output, which when put into KiCAD gives “.gerber” file which can be used to print PCB

WORKFLOW



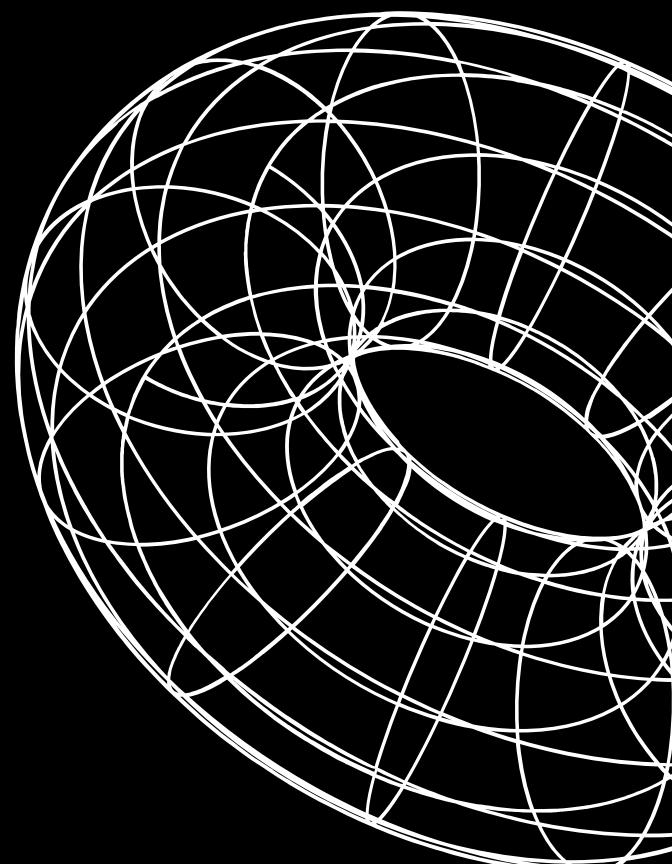




That's where

SKETCH2PCB

comes to play



SKETCH2PCB utilizes Computer vision model **YOLO** to detect components of a circuit in the sketch and after image processing “.net” file is returned as output, which when put into KiCAD gives “.gerber” file which can be used to print PCB

MARKET OVERVIEW

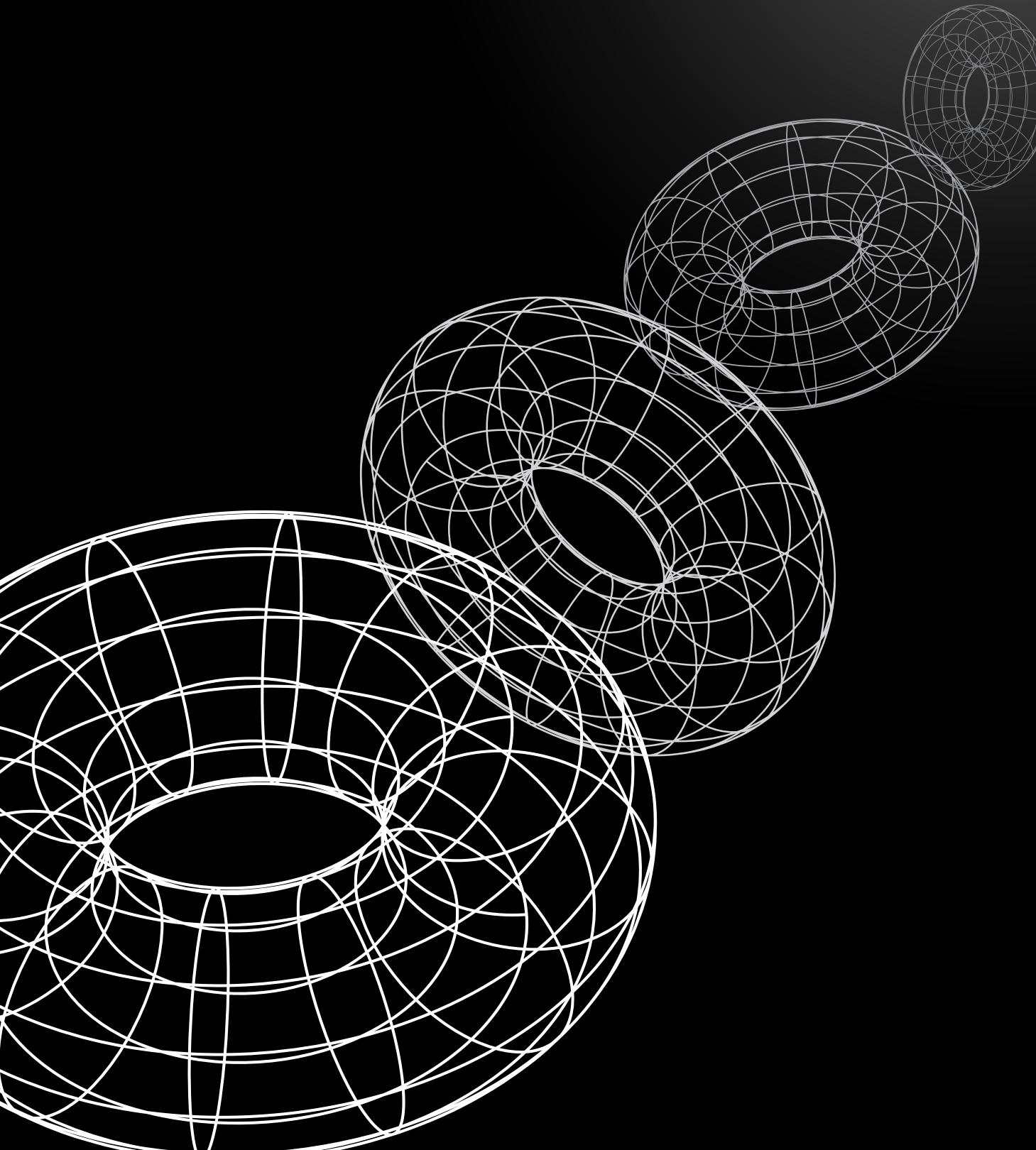
Target Audience:

- Beginners and Newbies
- Educational institution

**\$3.7 Billion
Industry**

Market Gaps:

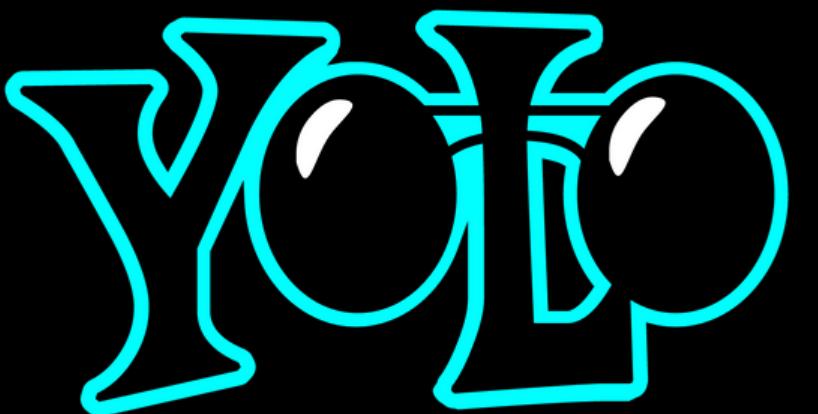
- Lack of friendly tools for novices

A decorative graphic on the left side of the slide consists of several white wireframe spheres of varying sizes, some overlapping, creating a sense of depth and motion.

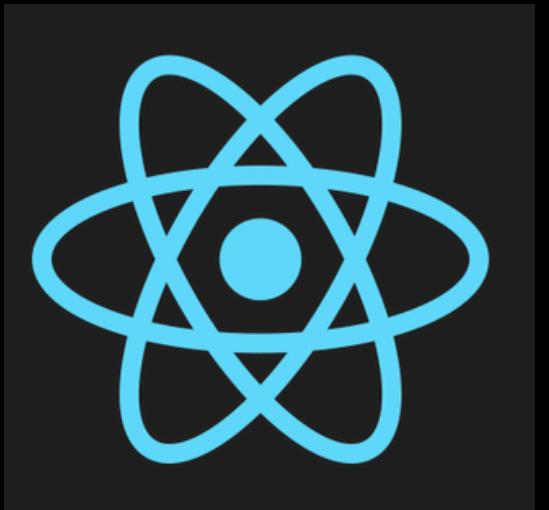
FUTURE ENHANCEMENTS

- Proper Model with high quantity of training dataset
- Component value prediction
- Full PCB layout generation

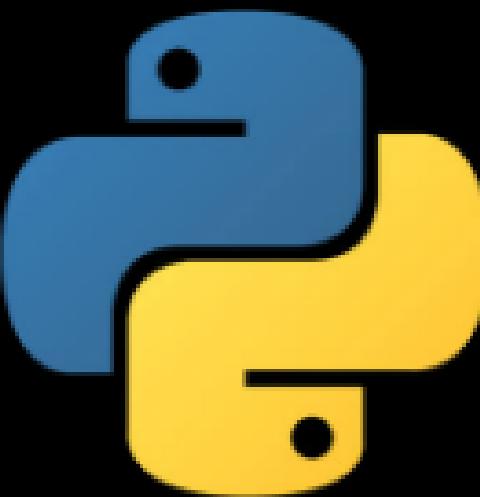
TECH STACK



YOLO v8



REACT.js



Python
(OpenCV, Numpy, flask)

REFERENCE

"Electronic Circuits Dataset," Roboflow Universe, accessed December 1, 2024,
<https://universe.roboflow.com/sarl/electronic-circuits-ifz6c>.

TEAM ROBOSKY



Lawan

Shriharsh

Slok

Robesckey

THANK YOU

TEAM ROBOSKY