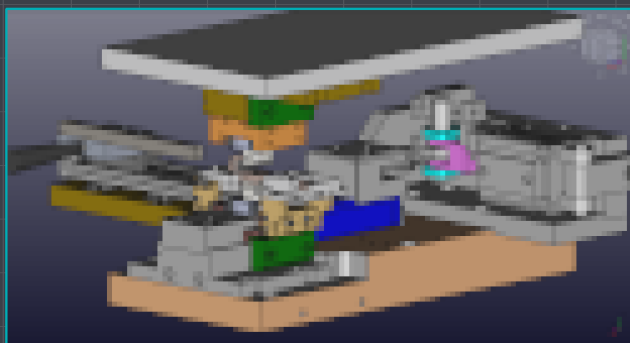


R&D and Mechatronics

Blending mechanical design with automation

Case: industrial tooling for EV parts production

Developing CAD models 1



(images are pixelated due to NDA)

Providing client with prototyped CAD models and manufacturing drawings 2

3

Producing the set of custom fixtures in cooperation with subcontractor company

Complexity



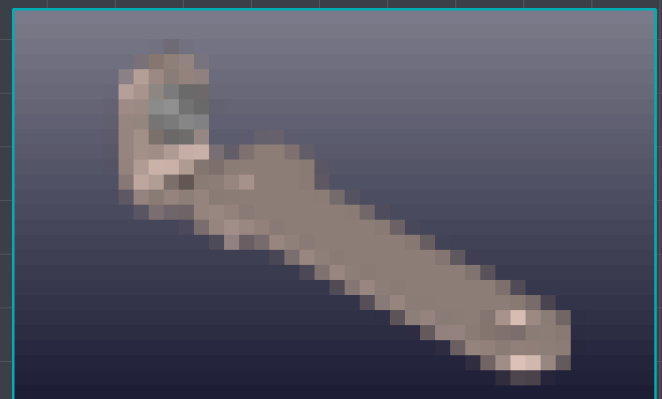
Time



Cost



Client contacted Knowera with request to develop a set of re-adjustable fixtures for busbar welding, used in electric vehicles (EV), and respective manufacturing documentation



(image is pixelated due to NDA)

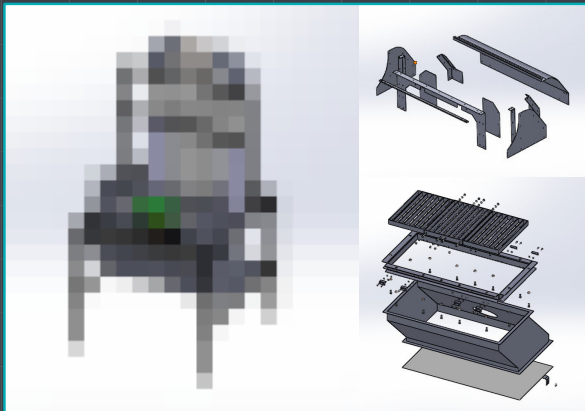
R&D and Mechatronics

Blending mechanical design with automation

Case: industrial working stand with dust collector

Developing CAD models

1



Outsourcing sheet metal work to colleagues

2



Received components were assembled in-house

3

Complexity



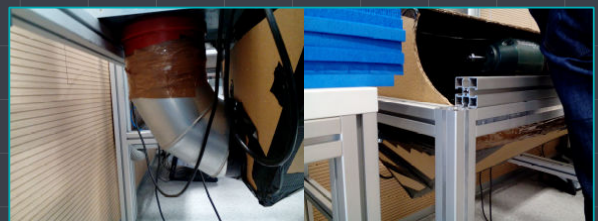
Time



Cost



Client contacted Knowera with request to develop a model and documentation for ventilated working stand and provided photos of prototype built on-site



Providing client with assembled stand, CAD models and drawings

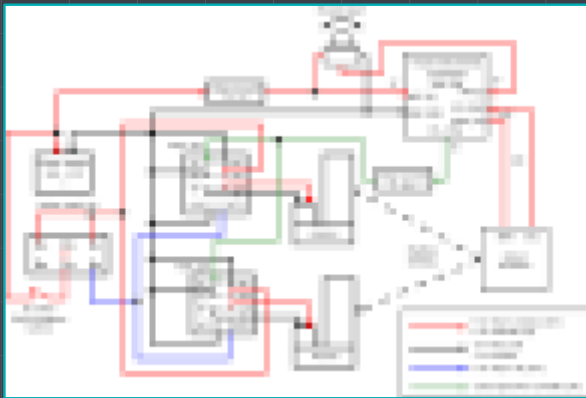
R&D and Mechatronics

Blending mechanical design with automation

Case: closed loop control system in enclosure

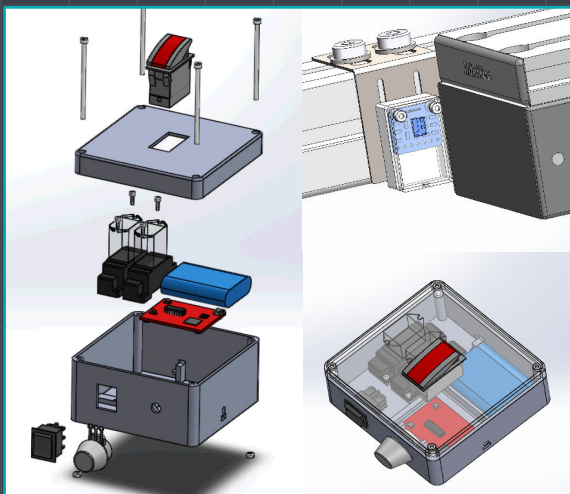
Developing schematics

1



Developing fitting enclosures

2



Auxiliary electrical components were also chosen and listed

Complexity



Time

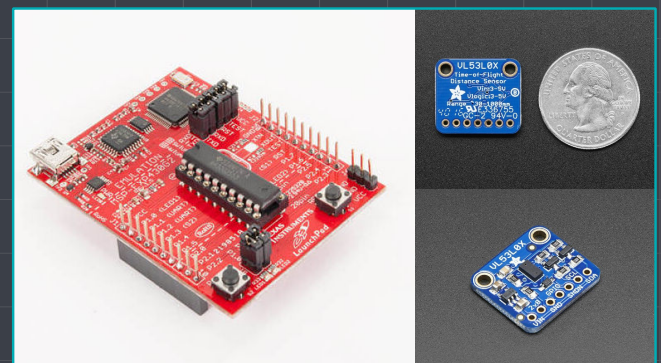


Cost



Client contacted Knowera with request to develop a control system with analog input and visual feedback loop

Client sent us TI MSP430 (control) and Adafruit VL53LO (visual feedback) for precise fitting



3

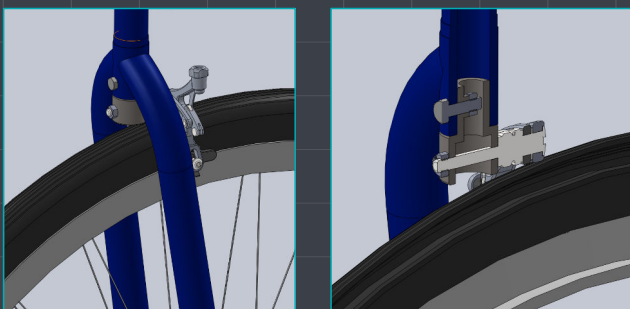
Providing client with CAD models and drawings

R&D and Mechatronics

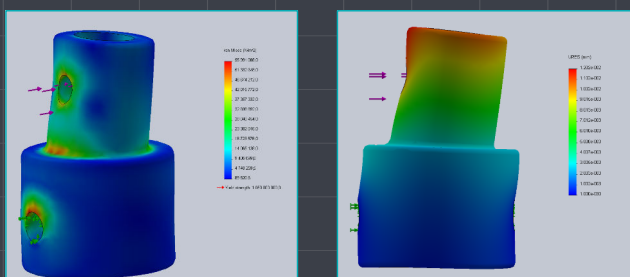
Blending mechanical design with automation

Case: adapter for bicycle front brakes

Developing CAD model

1


Carring out multiple stress simulations

2


Several load scenarios were calculated and tested out. The best material to 3D-print the prototype was found to be Ti-6AL-4V

Complexity



Time

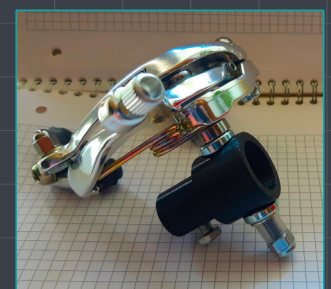
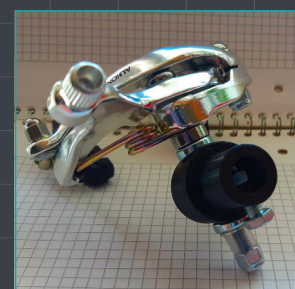


Cost



Client contacted Knowera with request to develop a custom adapter for retro bicycle that by design lacks front brakes

3D-printed plastic prototypes were produced several times to make fitting adjustments, according to the bicycle's frame geometry


3

Providing client with final fitting prototype and CAD model

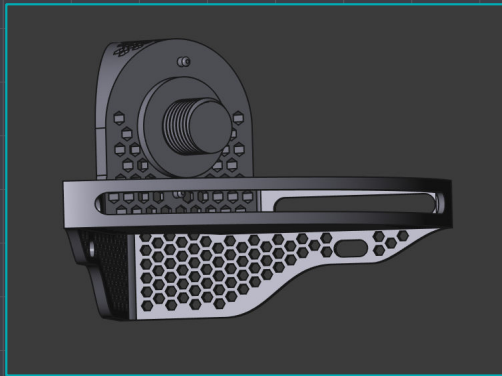
R&D and Mechatronics

Blending mechanical design with automation

Case: custom bathroom appliance

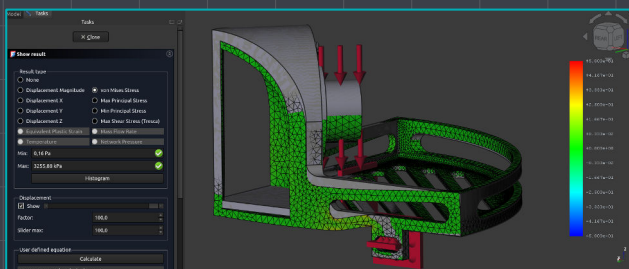
Developing CAD model

1



Carring out multiple stress simulations

2



Several load scenarios were calculated and tested out. The best material to 3D-print the prototype was found to be PLA filament

Complexity



Time

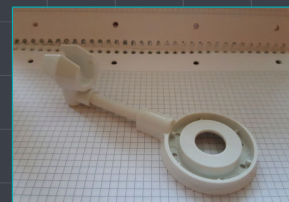


Cost



Client contacted Knowera with request to develop a lite and sturdy wall-mounted base-shelf for shower hanger, left after original base broke

Client sent us the original part (white material) around which the designing of the shelf was carried out (grey material)



3

Providing client with 3D-print ready CAD model