

Umit Levent Erol

Case Western Reserve University • Cleveland, Ohio • (216) 673 - 4141 • umit@case.edu • umit.page

Education

Case Western Reserve University

M.S. Mechanical Engineering

Case Western Reserve University (CWRU)

B.S. Mechanical Engineering

Anticipated graduation:

May 2021

Graduation:

May 2018

Software Skills

Highly proficient/Advanced

- SolidWorks (Certified Professional)
- HSMWorks CAM
- MasterCAM
- Adobe InDesign and Illustrator
- Windows, Mac OS, Linux operating systems
- MS Office/GSuite applications

Intermediate/Somewhat proficient

- Adobe Photoshop
- Scripting in MATLAB, Python, Arduino
- Web dev in PHP, HTML, MySQL
- LaTeX typesetting environment
- Eagle, KiCad (PCB design)

Beginner

- CorelDraw
- AutoCAD
- JavaScript
- Fusion 360 CAD/CAM

Manufacturing and Prototyping Skills

Highly proficient/Advanced

- Manual and CNC machine tool setup, operation and maintenance
- CAM and CNC programming
- Woodworking

Intermediate/Somewhat proficient

- CO2 laser cutters and engravers
- FDM and SLA printers
- Soldering and electronics prototyping
- Sheet metal work and metal fabrication
- MIG and TIG welding, brazing, soldering
- 4-5 axis CNC mill programming

Beginner/Hobby level

- Hand tool woodworking
- Hardwood joinery
- Woodturning
- Thermoforming
- Resin casting
- Composite layup

Work Experience

Sears think[box] at CWRU

Student technician

Continuous improvement and special projects technician (Co-op)

Fabrication student worker

Fabrication volunteer

2017 - 2020

(August 2019 – December 2020)

(January 2019 – August 2019)

(May 2018 – January 2019)

(December 2017 – May 2018)

- Assist and train users and student workers in the machine shop in safe use of equipment and best practices for woodworking, metal working, and welding
- Develop training curriculums for machine tools including lathes, mills, and welding equipment
- Work on internal projects for think[box] and as well as paid/contracted projects for outside customers and CWRU departments; involving student workers for training and skill building
- Teach manufacturing and CAD labs for EMAE 160 (Mechanical manufacturing), EMAE 290 (Computer-aided manufacturing), EMAE 390 (Advanced manufacturing technology)
- Assist in installation of new equipment and work with facilities to install power and air for new equipment
- Manage material and tool inventory for classes, projects and repairs

Bioinspired Robotics Lab at CWRU

Cleveland VA Medical Center

Research assistant

2018 - present

- Perform mechanical design and manufacturing work for NSF and VA funded projects
- Conduct design for manufacturing reviews with M. S. candidates and undergraduate students

Department of Mechanical Engineering at CWRU

Teaching assistant for EMAE 360 (Design and Manufacturing II – Senior Capstone)

2018

- Oversee and assist student teams to design motorcycle engines for senior capstone project and assist with engineering tasks including analysis, design and market considerations, CAD modelling, and weekly progress reporting.

Tissue Fabrication and Biomechanics Lab at CWRU

Research Assistant

2014 - 2018

- Developed automated manufacturing electrochemically aligned collagen (ELAC) technology; designed and built equipment and control systems for continuous collagen threads production; patent pending.
- Developed computerized rotational jet spraying, a novel biofabrication method for scaffolds and grafts; patent pending
- Designed and implemented lab equipment such as biomechanical testing systems, optical alignment devices, and molds
- Managed senior (capstone) projects for undergraduate students.