

YAHYA BHATTI

(408) 464-6276 yahyabhatti16@g.ucla.edu

EDUCATION

University of California, Los Angeles (UCLA)

Sep 2016 – June 2020

B.S. Mechanical Engineering, Technical Breadth in Computer Science

- **Relevant Coursework:**

Finite Elements Methods	Modeling Dynamic Systems
Dynamics of Particles and Rigid Bodies	Feedback and Control Systems
Mechanisms and Mechanical Systems	Advanced Strength of Materials
Engineering Thermodynamics	Manufacturing Processes

ENGINEERING PROJECTS

Bruin Racing: Baja SAE

Sep 2017 – June 2018

Gearbox Efficiency:

- Brainstormed and implemented a system to measure gearbox efficiency using induced EMF with a team of five. Coupled a motor to the input and a generator to the output of several gearboxes and used the generated current to determine output power and gearbox efficiency.
- Quantitatively compared different gearboxes for performance and made adjustments to gear ratios and other design elements to fully optimize our powertrain.

Motor Mount Design:

- Designed several motor mount CAD models using SolidWorks for the gearbox efficiency problem focusing on simplicity and structural integrity and machined the parts from the final design.

Team Lead Senior Capstone Project: Autonomous Block Stacking Robot

- Led a team of five to design and simulate an autonomous robot for our senior design project.
- Designed in SolidWorks, a block orienter, double rack and pinion gripper and lift accounting for loads and stress/strain. Used Simulink to simulate interactions between the robot, blocks and terrain. Developed stacking algorithm, PID control, and state flow diagram for the robot.
- Received a letter of commendation from a design showcase judge.

INDEPENDENT PROJECTS

Animatronic Hand:

- Prototyped a 3-D printed animatronic hand that mimics the movements of a user-controlled glove.
- Flex sensors sewn into a user-controlled glove are used in combination with a voltage divider circuit to control servo motors. Arduino microcontroller is used to rotate servo motors a proportional amount to the bend in the flex sensors.

Motorized Chainsaw Bicycle:

- Built a tension based motorized bicycle using an old chainsaw motor. Designed and constructed a chainsaw mount that sits above the bicycle rear wheel to ensure stability during operation.
- Welded a sprocket to the chainsaw clutch cover to interface chainsaw with rear wheel and coupled the front braking mechanism to the chainsaw throttle for controlled acceleration.

Trebuchet:

- Designed and built 8-foot-tall Merlin and Floating Arm trebuchets optimizing for distance and mechanical efficiency.

TECHNICAL SKILLS

Software: Proficient in SolidWorks, Abaqus, Simulink, MATLAB, C++, Arduino IDE, Microsoft Office

Analysis: Finite Elements Analysis, Structural Analysis, Thermal Analysis, Statistical Analysis

CAD/MACHINE TRAINING

- Developed 3D designs and 2D drawings of various off-road vehicle components and conducted structural analysis of frames using SolidWorks in a quarter long training program led by the Bruin Racing team.
- Machined a clevis and bias bar within a 0.004-inch tolerance using lathe, mill, drill press and other tools.

WORK EXPERIENCE

SPM Lighting

July 2017 – Sep 2017

- Assembled industrial grade LED lighting systems and configured LED driver cabling systems.