Francesco Ferri Mechanical Engineering Student

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Available Summer 2023

TECHNICAL SKILLS

Software

- Solidworks and F360
- AutoCAD
- C++, Python and MATLAB
- Arduino Microcontrollers
- PLCs
- Linux, Bash, RPI
- Ansys Fluent and FEA

Hardware

- CNC Machining
- DFM/DFA
- GD&T
- FDM and SLA Printing
- Prusa, Creality, Ultimaker
- Milling, lathe and hand tools
- Composite materials
- Wood Working
- Sheet Metal

Languages

- English
- Italian

ENGINEERING STUDENT TEAMS

UBC Sailbot, University of British Columbia — Jan 2022 – Present
Mech Lead

- Evaluated wing sail design from mathematical perspective investigating weight, lift, drag and shape to find best optimization path; used parametric equations and Matlab model.
- Used SolidWorks and Ansys Fluent developing wing sail models to be validated in wind tunnel testing
- Revised current boat rigging setup implementing modifications to strengthen design
- Designed and built wind sensor mounting bracket using sheet metal material

WORK EXPERIENCE

Capilano Maritime Design, North Vancouver, BC — Jan 2023 – Present
Naval Engineering Intern

- Used fluids and thermodynamic principles to design exhaust arrangement for Tug, minimising noise and meeting requirements set by industry regulations.
- Modelled crane-barge mounting platform in Solidworks, evaluating structural modification in Ansys FEA to validate safety margins of design.
- Collaborated in a ship survey to assess structural damages, created LIDAR scans to model damage accurately; with the team, developed repair plans.
- Used Autodesk to design fuel and ballast tanks systems on 20m Tug following ABS Regulations

Study-Build, Campbell River, BC — May 2021 – Dec 2021
Mechanical Intern

- Developed a paper loading machine to streamline production of thermally performant cardboard boxes, reducing use of single-use packaging in the seafood industry.
- Applied DFM principles to design gantry structure of paper loading machine, decreasing manufacturing costs during CNC machining and 3D printing.
- Developed interactive BOM in excel, tracking manufacturing and procurement of parts to produce prototypes on time and within budget
- Collaborated with team to build system in excel to track status of projects based on tasks and weekly sprints; increased productivity and more goals achieved per week
- Led development of software for paper loading machine with C++ and Arduino platform by following value and KPI based approach; decreased loading time and increased safety of loading machine.

PROJECTS

Online Portfolio, Personal Project (direct: www.fcferri.com) Aug 2022 – Present

- Coded static page website using Jekyll builder to share my projects and blog posts
- Deployed website using Cloudflare and GitHub Pages while integrating versioning to publish new versions automatically
- Used Sass to create consistent style sheet throughout site, implementing dark theme, interactive buttons and project cards
- Animated site, page scrolls and hero carousel through Javascript

Paper Loader, Study Build Aug 2021

- Streamline production of thermally performant cardboard boxes to reduce the use of single-use packaging in the seafood industry
- Performed needs analysis with client and users involved to initiate the design process
- Used Fusion 360 to apply DFM principles for expensive CNC parts
- Built first version of the product using 80/20 platform as building material for flexible prototyping
- Increased safety of operators with designed failure modes, while retaining high precision during paper indexing

Wood Storage Rack, Study Build Sep 2021

- Created a storage solution with natural materials for transport, offices and live performances
- Used parametric equations to design intuitive movements of modules, allowing user to customise viewing angles
- Types of modules developed with value-based approach based on the client's feedback
- Implemented DFA principles to reduce assembly times of components, resulting in lower production costs
- Applied FEA analysis to maintain lightweight design, making modules easier to transport without compromising safety

Mag-Lev Device, University of British Columbia June 2021

- Operated milling machine, lathe, drill press, band saw, press brake, and spot welder to build sheet metal and plastic components for mag-lev device
- Assembled and soldered control board; tuned board using PID controllers to ensure a reliable levitation action
- Validated tolerances of manufactured parts using precision measuring instruments

3D Bagatelle Game, University of British Columbia Nov 2022

- Coded game using C# and .NET framework
- Developed intuitive UI for score and records keeping
- Integrated MSP accelerometer through serial communication to be used as a controller

EDUCATION

University of British Columbia
Bachelor of Applied Science - Mechanical Engineering
Year 4 Standing - Graduating in May 2024

INTERESTS

- Car enthusiast
- Cooking Italian Dishes
- Windsurfing and Sailing
- Coding