

# JOSE DOS RAMOS

MECHANICAL ENGINEERING STUDENT

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## ABOUT ME

Fourth-semester Mechanical Engineering student with a strong analytical background and practical experience in mechanical design. Proficient in CAD, and a strong interest in DFM

Fluent in Spanish, Portuguese, and English, with basic proficiency in Danish.

## EDUCATION

### University of Southern Denmark SDU.

Bachelor of Engineering in Mechanical Engineering | Sep 2023 - Jan 2027



### University of the Algarve, Portugal, UAlg

Summer Workshop, Introduction to CAD Jun 2020 - Jul 2020



## PROFESSIONAL PROJECTS

### Product Optimization | Project Collaboration

Velux A/S Denmark, Skjern | Fev 2025 - June 2025



- Redesigning and Standardizing Components: Improve existing products in the accessories department by reducing 5 component variations. Simplifying the assembly process, thus reducing cost.
- Apply DFM principles. Specially for Polycarbonate (PC) Injection Molding.
- Collaboration with cross-functional teams working closely with R&D, manufacturing, and quality assurance teams to ensure design feasibility.

## UNIVERSITY PROJECTS

### Kraft Paper Protective Wrap Machine.

Semester Project at SDU | Feb 2024 - Jun 2024



- Led a team of 5 students to design and prototype a kraft paper protective wrap machine using Siemens NX and 3D printing, improving design accuracy and reducing material waste

### Laser-Cut Machine Parameters Optimization

SDU Student Workshop. | Nov 2023 - Dec 2023



- Developed a research to optimize laser-cutting processes for MDF and Plexiglass.
- Improved cutting quality and reduced processing time by 35%.

## TECHNICAL SKILLS

- Mechanical Design
- Rapid Prototyping
- Metal Work
- Tolerances Analysis, GD&T
- MatLab
- CAE (ANSYS)

## LANGUAGES

**Spanish**  
Native

**Portuguese**  
Bilingual

**English**  
Full Professional Proficiency

**Danish**  
Elementary Proficiency

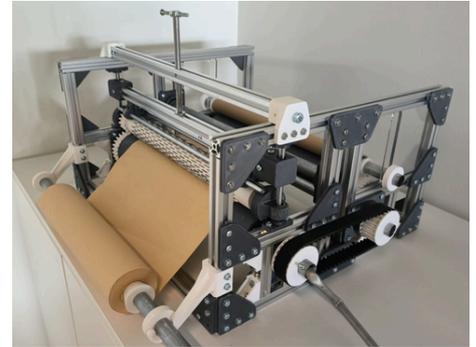
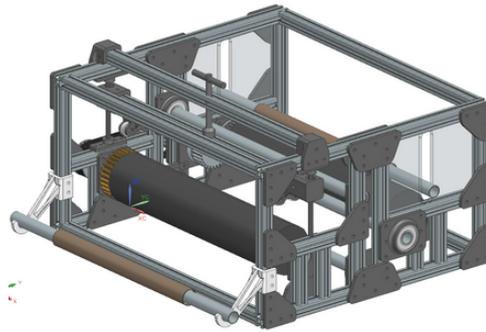
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## KRAFT PAPER MACHINE



### What?

- Design and prototype a kraft paper protective wrap machine to improve packaging efficiency and reduce plastic waste.

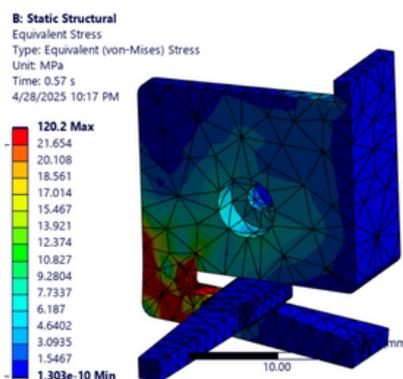
### How?

- Using Siemens NX for the design phase and 3D printing, laser cutting, and water jet processes for prototyping

### Results

- A functioning machine capable of processing 30 cm-wide kraft paper. The optimized design reduced material waste from 25% to 8%.

## STANDARDIZING MOUNTING BRACKETS IN BLINDS



### What?

- Standardize a snap-fit mechanism for easier blind installation while maintaining structural integrity and user ergonomics.

### How?

- Applied contact FEA (ANSYS) to predict deflection and force requirements.
- Defined geometric constraints and material properties to ensure snap engagement within a 3–5 kg ergonomic force limit.

### Results

- Achieved a working design validated by simulation, requiring ~5 kg of user force.
- Optimized critical thickness, improving performance and ensuring durability without over-stressing components.

## METAL STRUCTURES



### What?

- Engineering thinking to develop an idea into an actual functional product
- Reduce the amount of material by optimizing the design.



### How?

- Using **Mig Welding** and **bedding metal techniques** to ensure rigid and reliable structures.



### Results

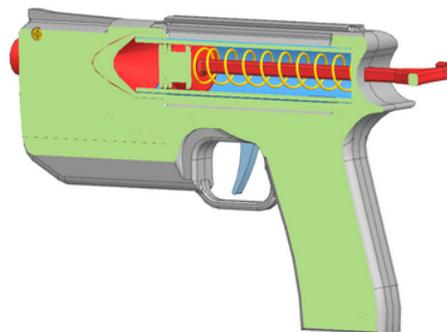
- Good-looking structures, for happy customers.

## NERF GUN



### What?

- Design and prototype a Nerf Gun powered by a spring capable of delivering 330 mJ of kinetic energy, not exceeding EU regulations.



### How?

- Utilized NX for design, 3D printing, and laser cutting to prototype the gun, iteratively improving each part for greater efficiency. Fx tested six different nozzle designs to determine the best one.



### Results

- Achieved a winning score of 90 points in a competition among 12 groups, evaluated on criteria such as power, accuracy, reload time, and efficiency.