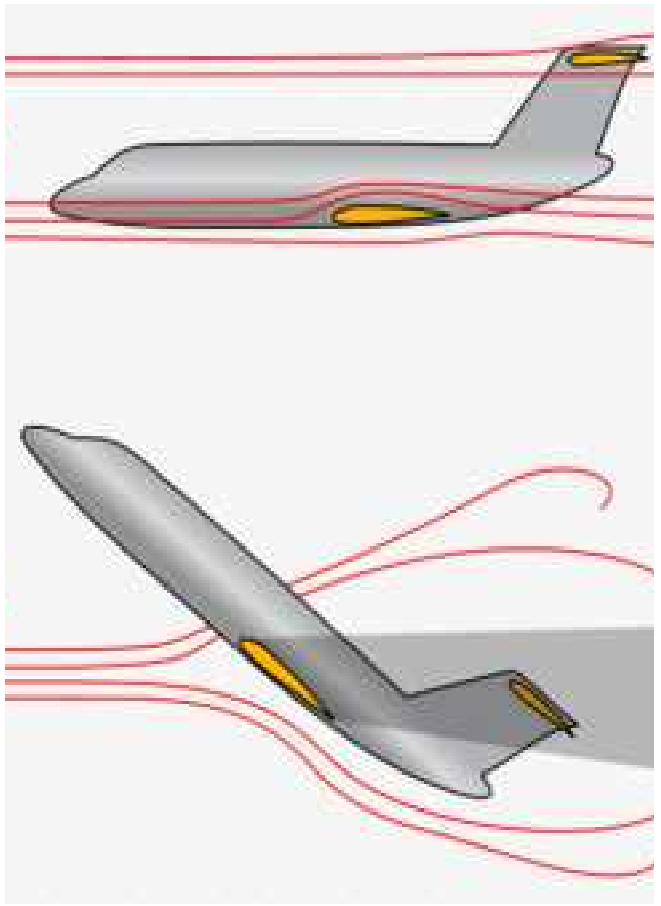
# Mechanical Engineering

# Who am I?

- Siomha Heekin
- Sligo
- Masters in Mechanical Engineering

# Why - Choose Mechanical Engineering ?



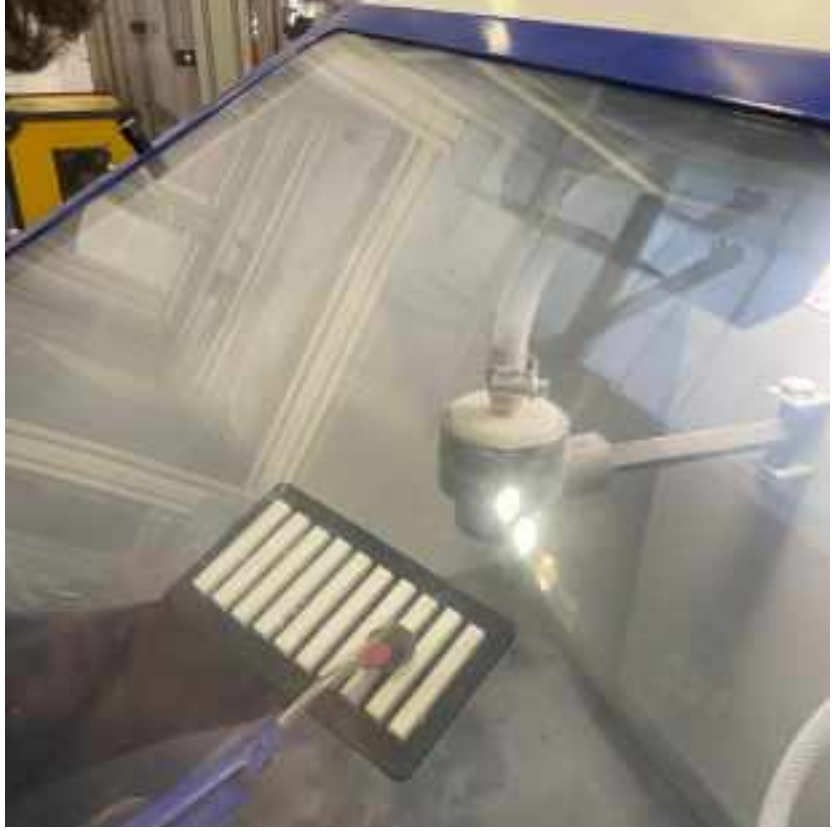
# Study Abroad

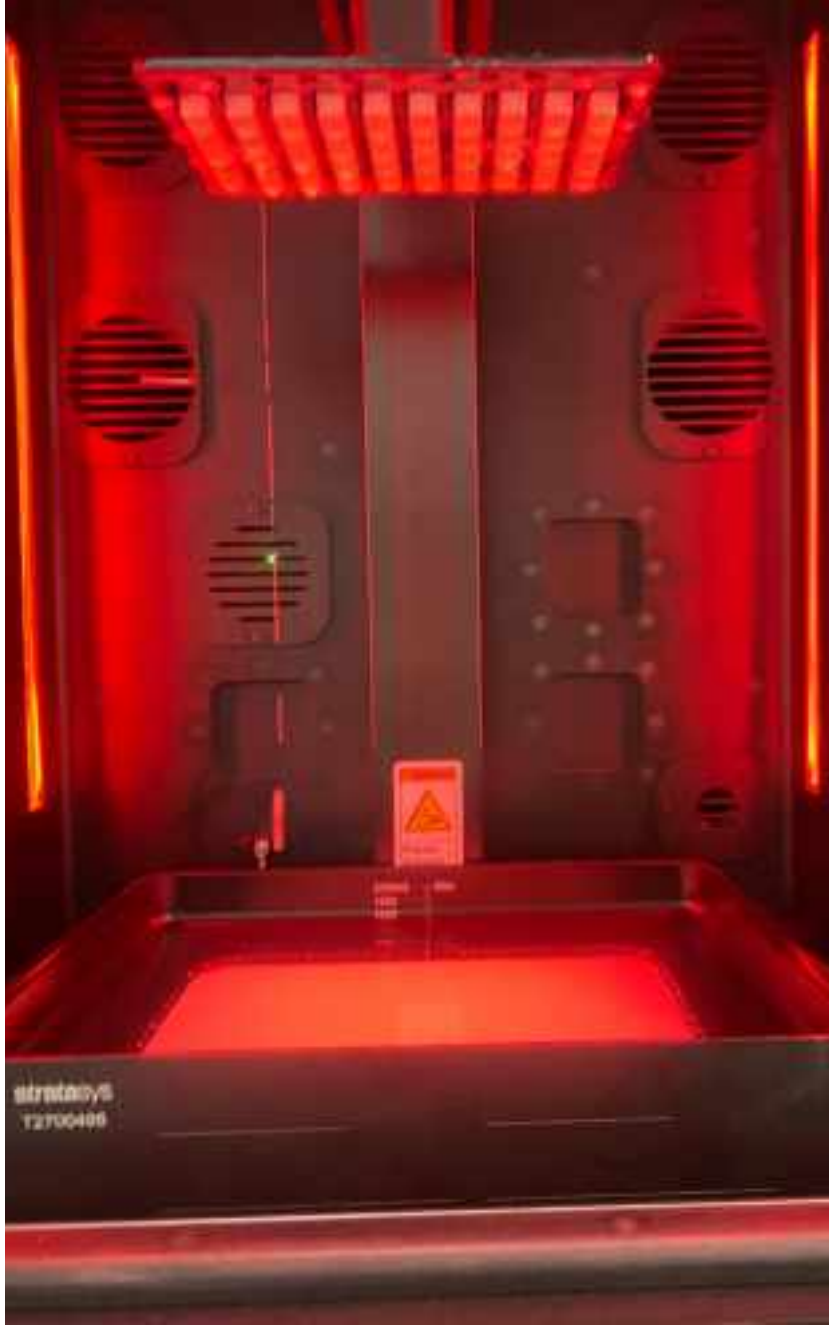
- One or Two Trimesters
- Options in Australia, Canada, China, Germany, New Zealand, Singapore, UK, USA
- GPA Neutral

# Masters Options

- Multiple stream options
- Paid internship
- Furthering Knowledge
- Thesis project

# Internship



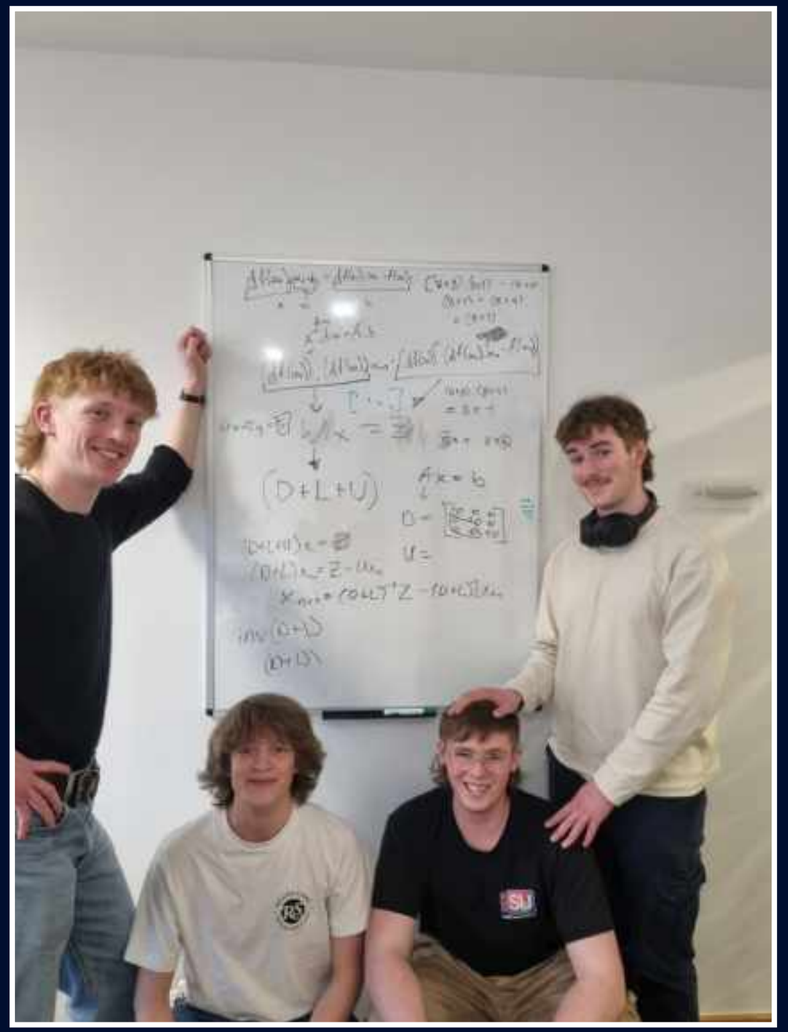


Thesis

- DLP 3D printing
- FFF 3D printing
- Mechanical Material Characterisation

# MECHANICAL ENGINEERING

## Dara O’Grady



# ABOUT ME

- Stage 4 Mechanical Engineering student.
- Completing my BE this year.
- From Dublin.
- I play rugby.
- I play violin and guitar.

# WHY DID I CHOOSE MECHANICAL ENGINEERING?

- Interest in applied Maths and physics from school.
- Reinforced by interest in modules like mechanics and energy engineering.
- Crossover with other disciplines.
- Provides an abundance of career options, as many industries rely on mechanical engineers.

# INTERNSHIPS


## PM Group

- Smart manufacturing intern.
- Summer after first year.
- Learned about working in an engineering company.
- Gained knowledge about smart manufacturing and industry 4.0.

## VLE Therapeutics

- Worked in the engineering team.
- Summer after third year.
- Gained experience in the pharmaceutical industry.
- Implemented skills from my three years of study.

# WHY DID I CHOOSE THE BE?

- Preference to do one year less study and begin work.
- Decided against a Master's since I have already done two internships.
- Possibility to do a Master's after a few years of work to help with my career.

# WHAT DID I ENJOY MOST ABOUT COLLEGE?

## Engineering

- Working in a team.
- Practical work.
- Challenging myself.
- Elective Modules.

## Extra Curricular

- Engineering Society.
- Surf Club.
- Snow Sports Club.

# NEXT STEPS

- Currently completing my final year project where I am designing and building a sun sensor for a nanosatellite.
- Assessing my options for next year and applying to work from next September.

# ADVICE

- *Make the most of societies and clubs to explore new hobbies and meet people.*
- *Take part in activities/trips early in the term before coursework gets too demanding.*
- *Stay on top of college work to help yourself in future years and maintain grades for study abroad opportunities.*
- *If you do the BE, it may be worthwhile doing an extra module in Autumn to give more time for your project.*

# THANK YOU


# Mechanical Engineering

Brian Sheridan

# About Me

- Final year ME Mechanical Engineering student.
- Undergraduate degree from SETU Waterford in Mechanical and Manufacturing Engineering.

**B.Eng. (Honours) in Mechanical and Manufacturing Engineering**

**Final Year Project**

**Year: 2023**

**Investigation into the high failure rates of a brazed plate heat exchanger, as used on a GEV 91630 AR-2 Autoclave in the manufacturing of contact lenses.**

BAUSCH + LOMB

# Why I Chose Mechanical Engineering

*“Mechanical engineering is one of the broadest engineering disciplines. It involves the design, construction, operation, and testing of mechanical systems and machines”.*

NASA 2023

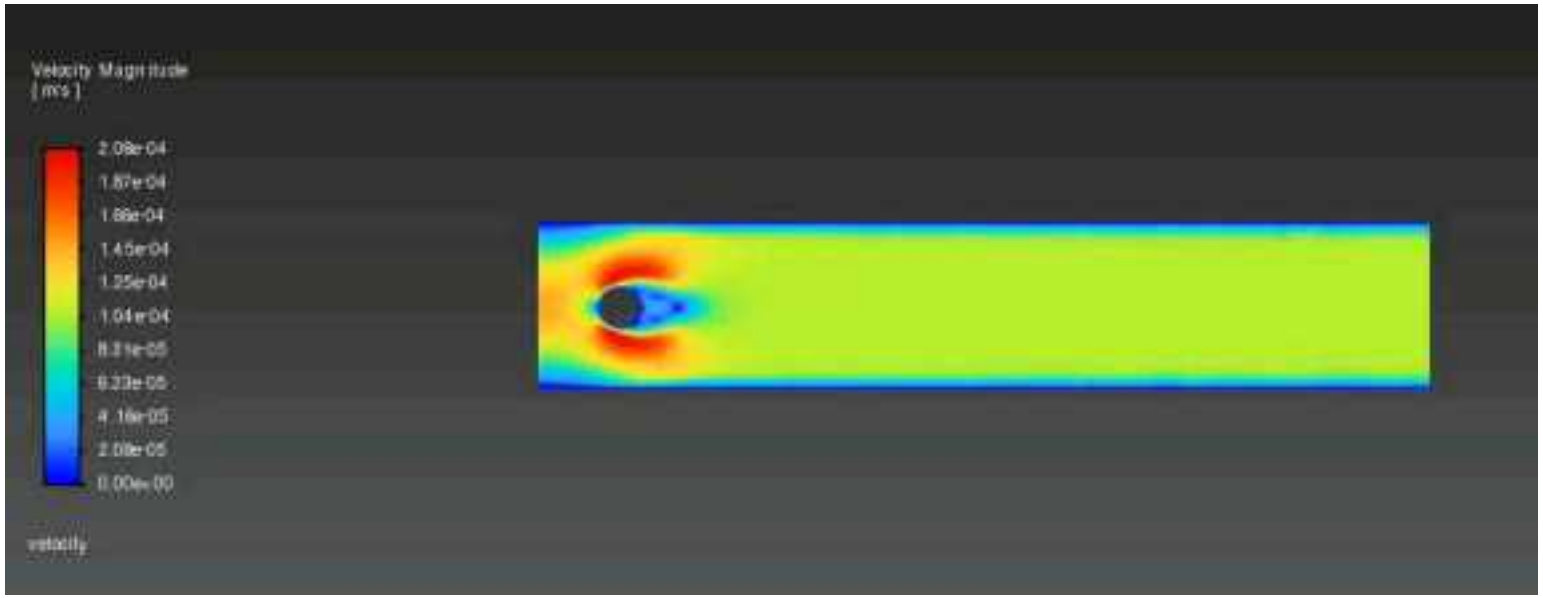
# Why I Chose Mechanical Engineering


# Why I Chose Mechanical Engineering


# What I Enjoy Most About Mechanical Engineering

- Hands-on learning.
- Observing theory through lab work.

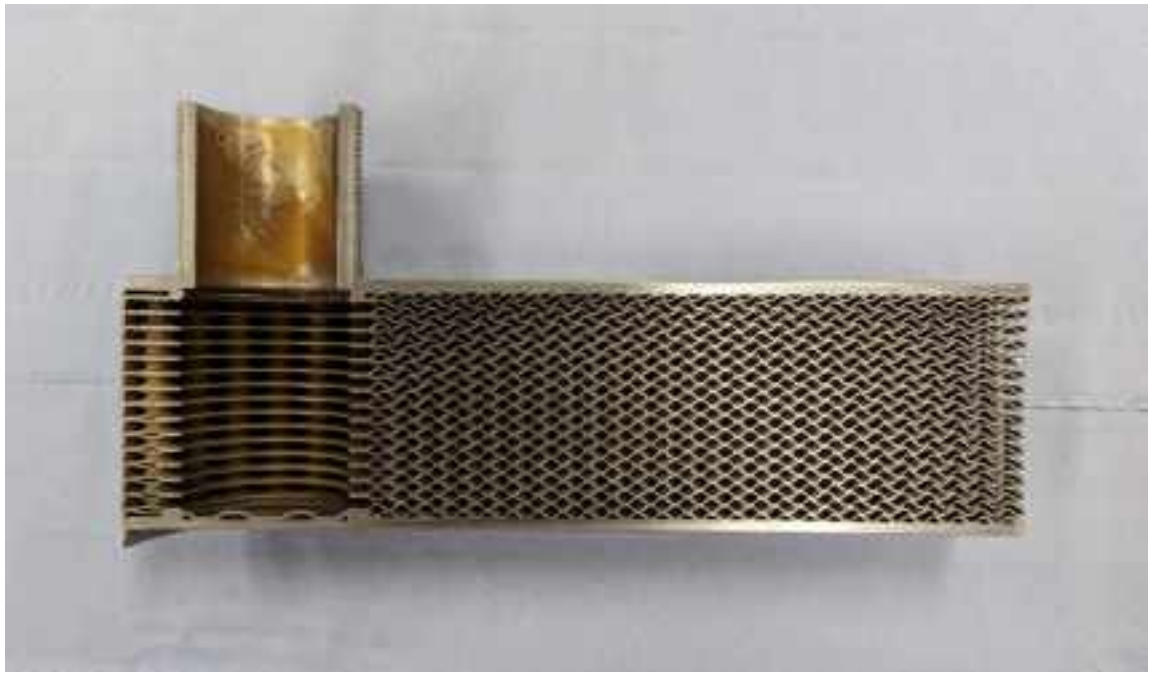
# What I Enjoy Most About Mechanical Engineering

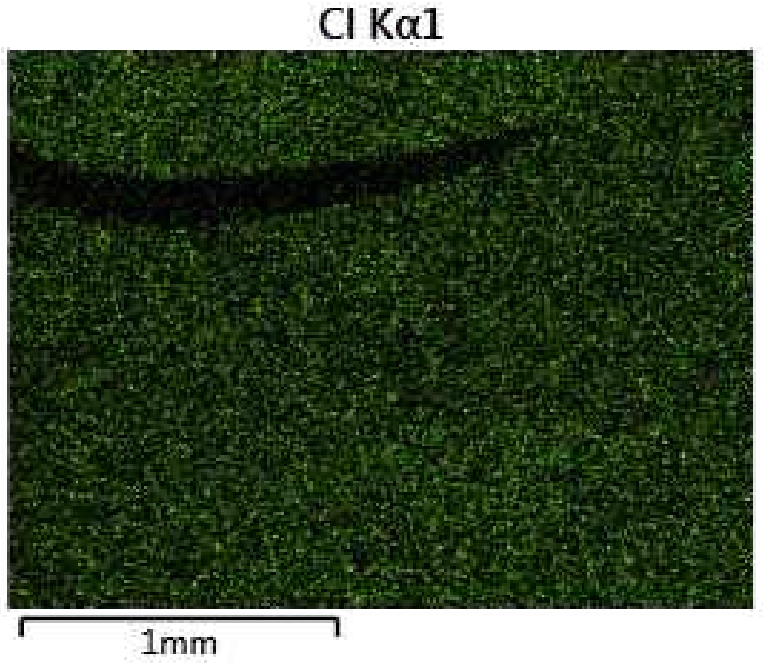



# My Life Outside of UCD

BAUSCH + LOMB
See better. Live better.


# My Life Outside of UCD





# My Life Outside of UCD




# My Life Outside of UCD


# Future Plans

## Do All Material Stick to Bone?

Interim Presentation

Brian Sheridan
Supervisors: Prof Alojz Ivankovic & Prof Rob Flavin

# Closing Thoughts

- Diverse field with many subdivisions.

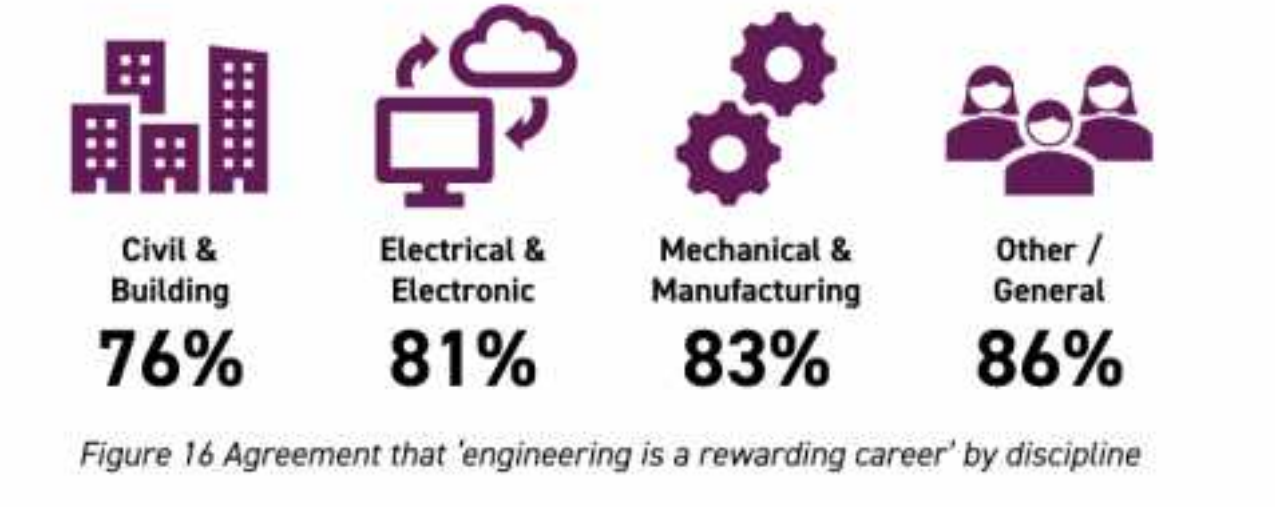


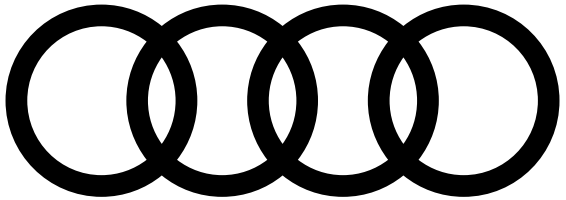

*Figure 16 Agreement that 'engineering is a rewarding career' by discipline*

Engineers Ireland. A Barometer of the Profession in Ireland. 2024


# Thank you!

# My Mechanical Engineering Journey

Finn O’Reilly

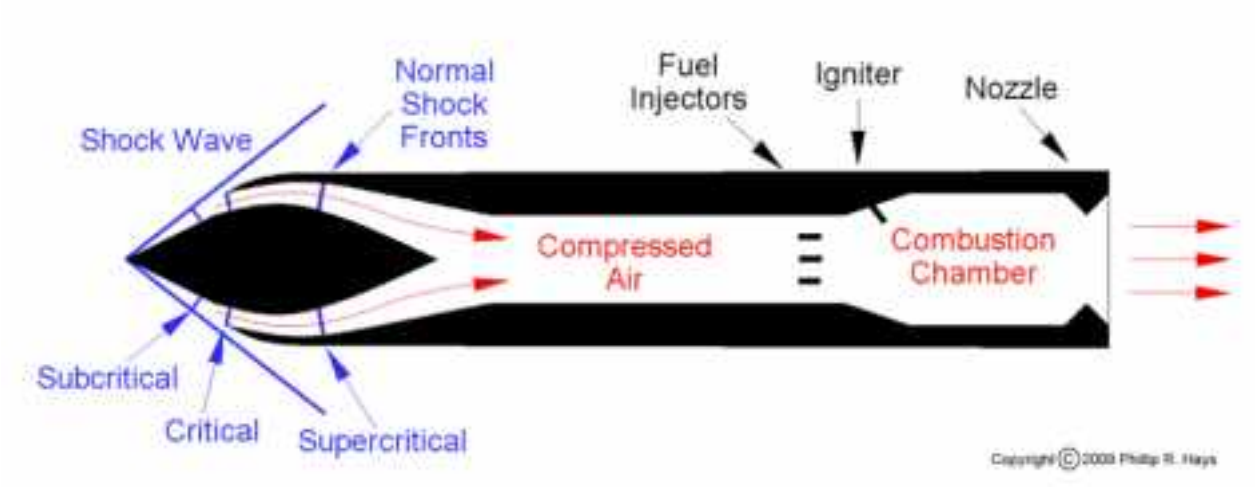
# About me


- Stage 2 Masters of Mechanical Engineering Student
- From Glasnevin, Dublin
- Pretty Sporty


# Why I chose Mech

- Keep options open
- Learn about cool technology
- Be employable

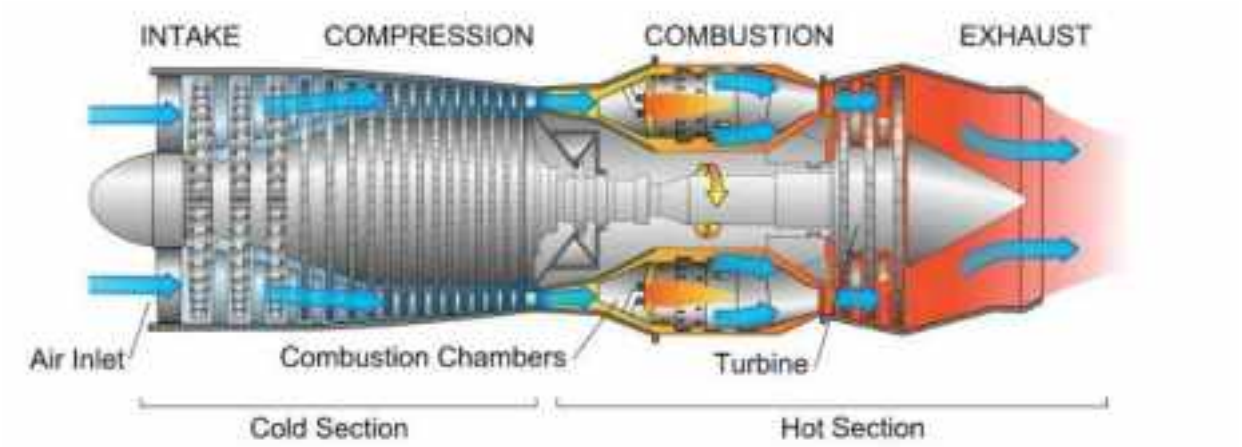
# Some Cool Topics – Fluid Dynamics

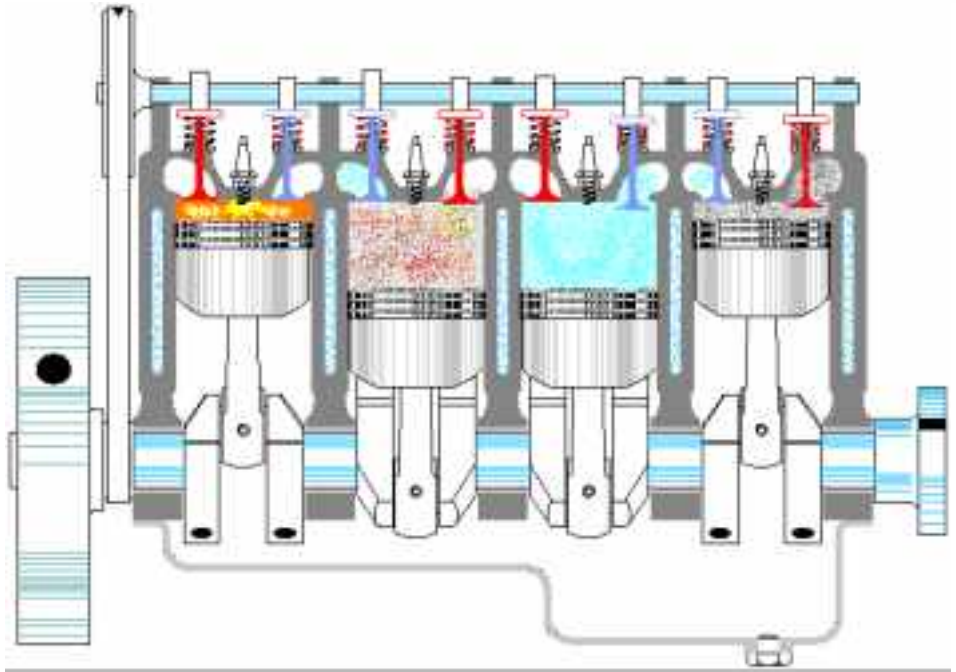



$$\nabla \cdot \vec{V} = 0$$

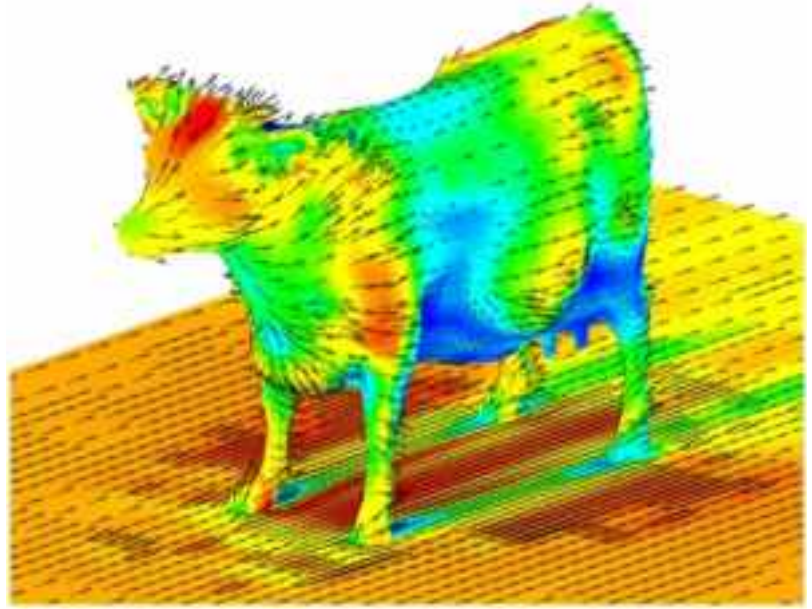
$$\rho \frac{\partial \vec{V}}{\partial t} + \rho \left( \vec{V} \cdot \nabla \right) \vec{V} = -\nabla p + \mu \nabla^2 \vec{V} + \rho \vec{g}$$

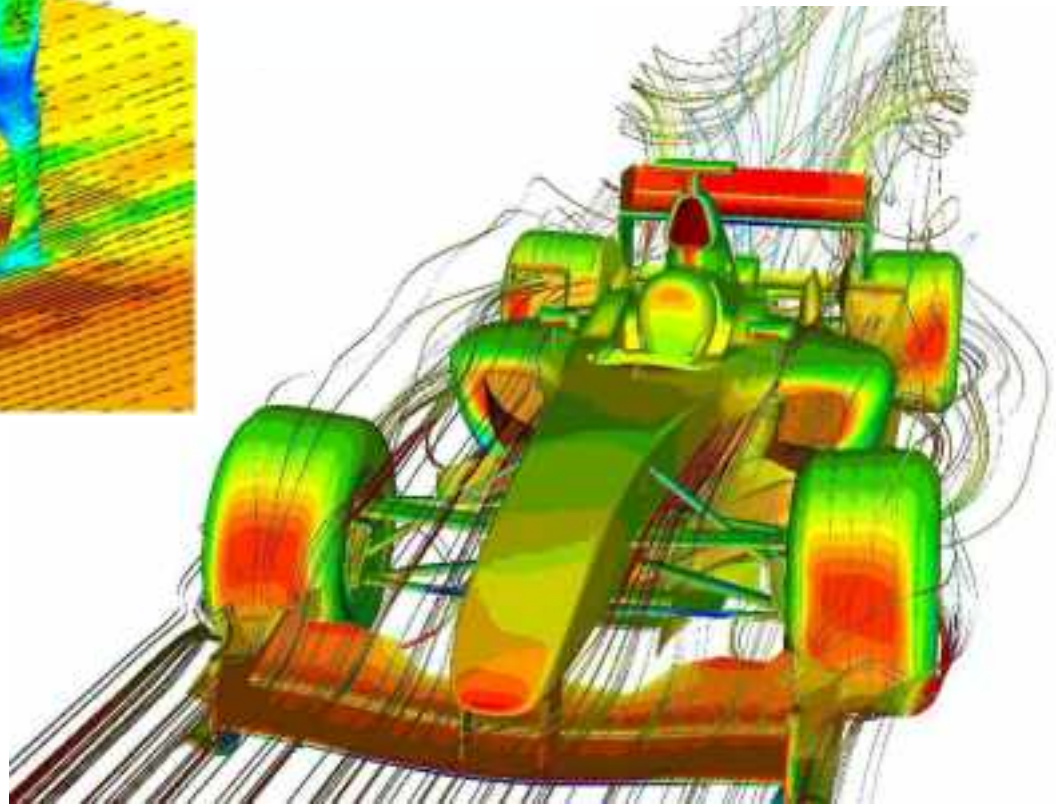
# Some Cool Topics – Thermodynamics



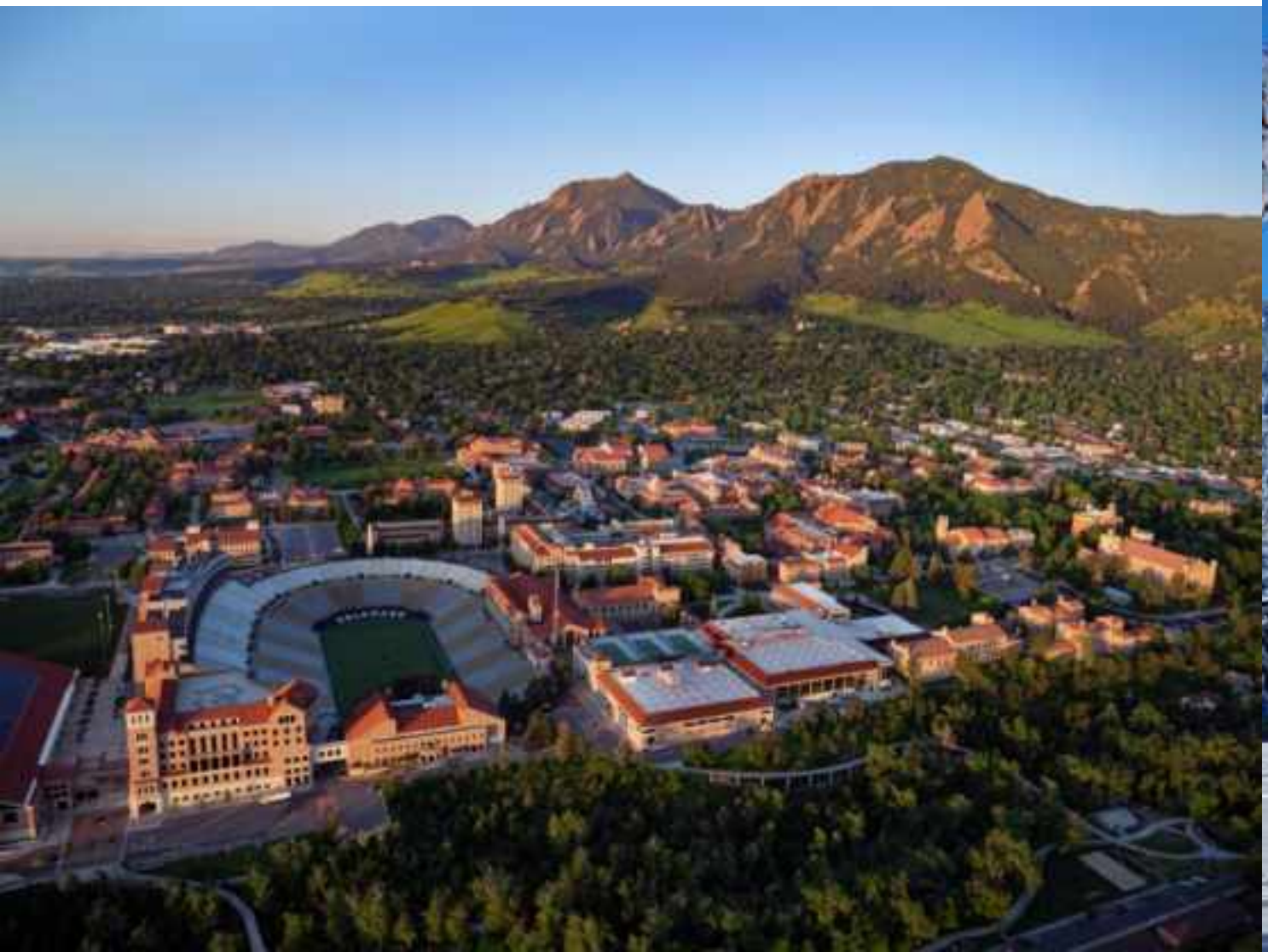



# Some Cool Topics – Computational Continuum Mechanics





# Exchange to CU Boulder



# Exchange to CU Boulder

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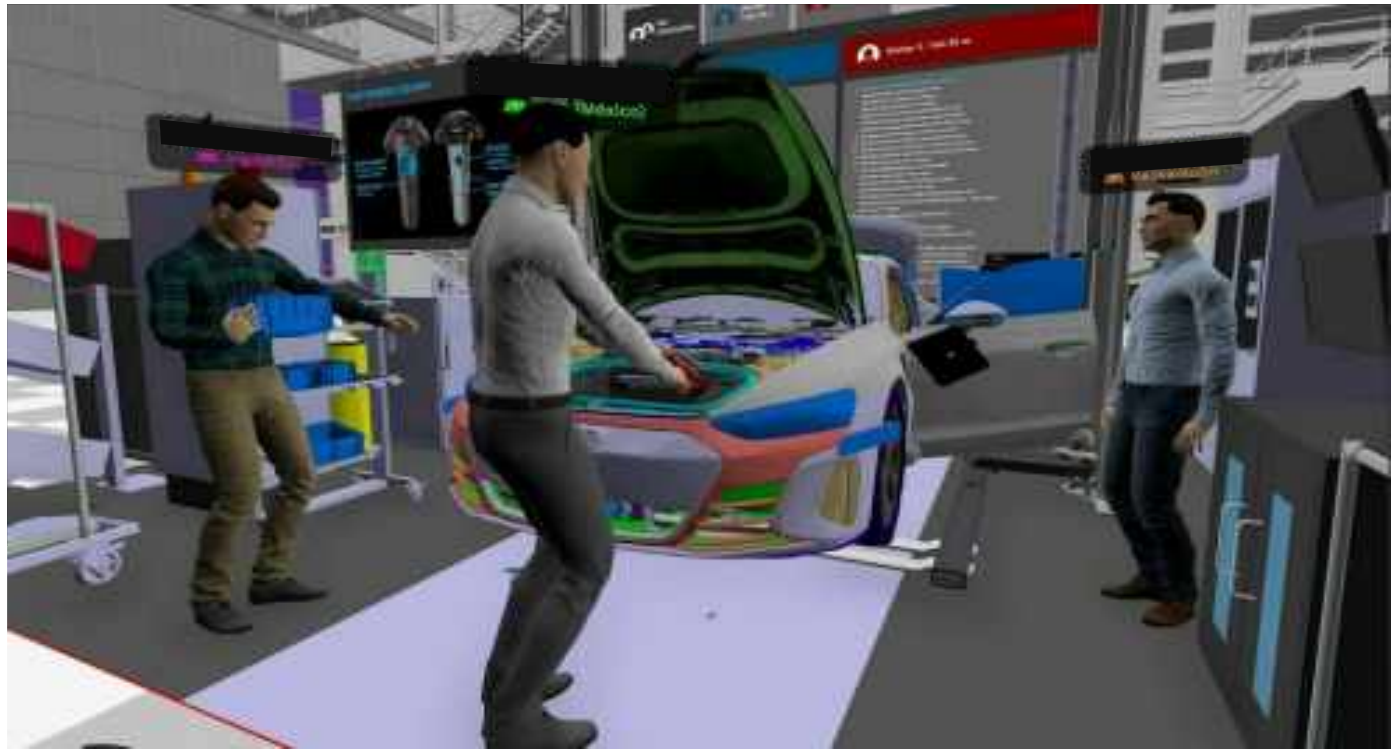
# Internship

- **Company: AUDI AG**
- **Location: Ingolstadt, Germany**
- **Department: Production → Virtual Assembly Planning**
- **Duration: 6 months**
- **Self-Organised internship**

VOLKSWAGEN
AKTIENGESELLSCHAFT

# Internship

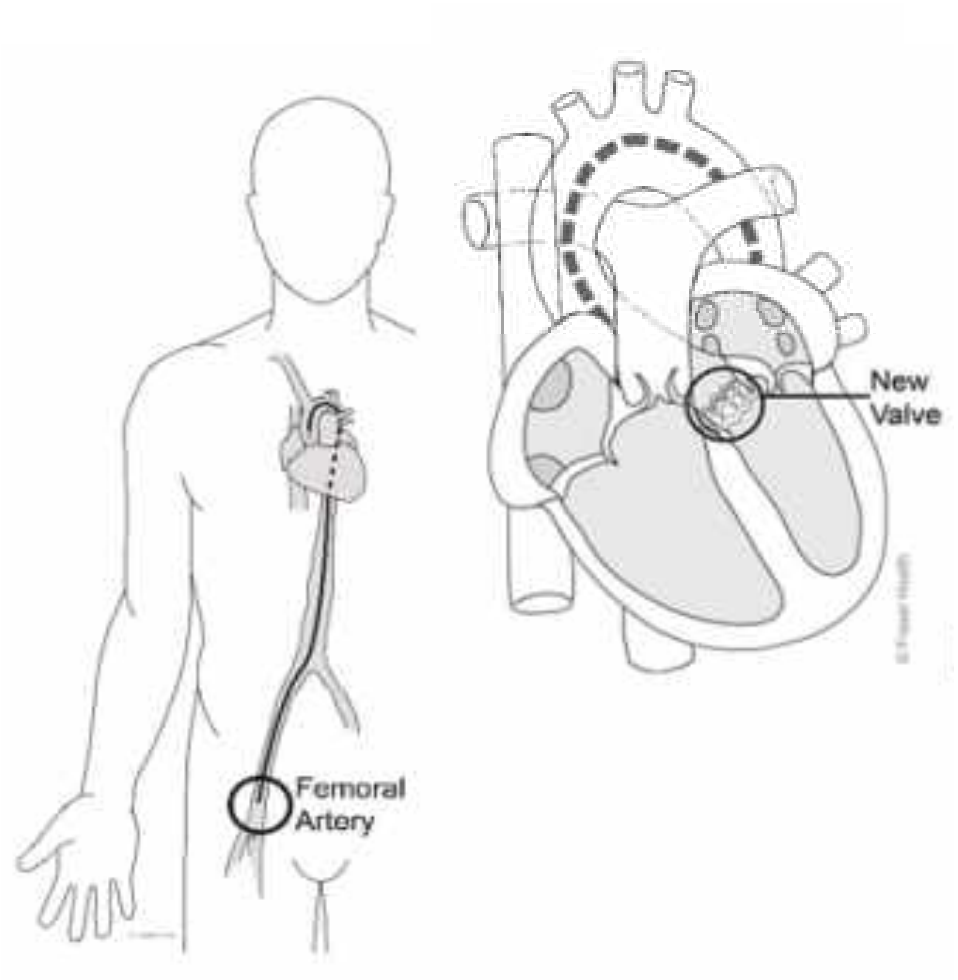
- **Worked on many different projects**
  - **Correspondence with Boston Dynamics for future 3D scanning project**
  - **Exporting CAD data for future car models**
  - **Creating automatic performance measures using VBA**



# Internship

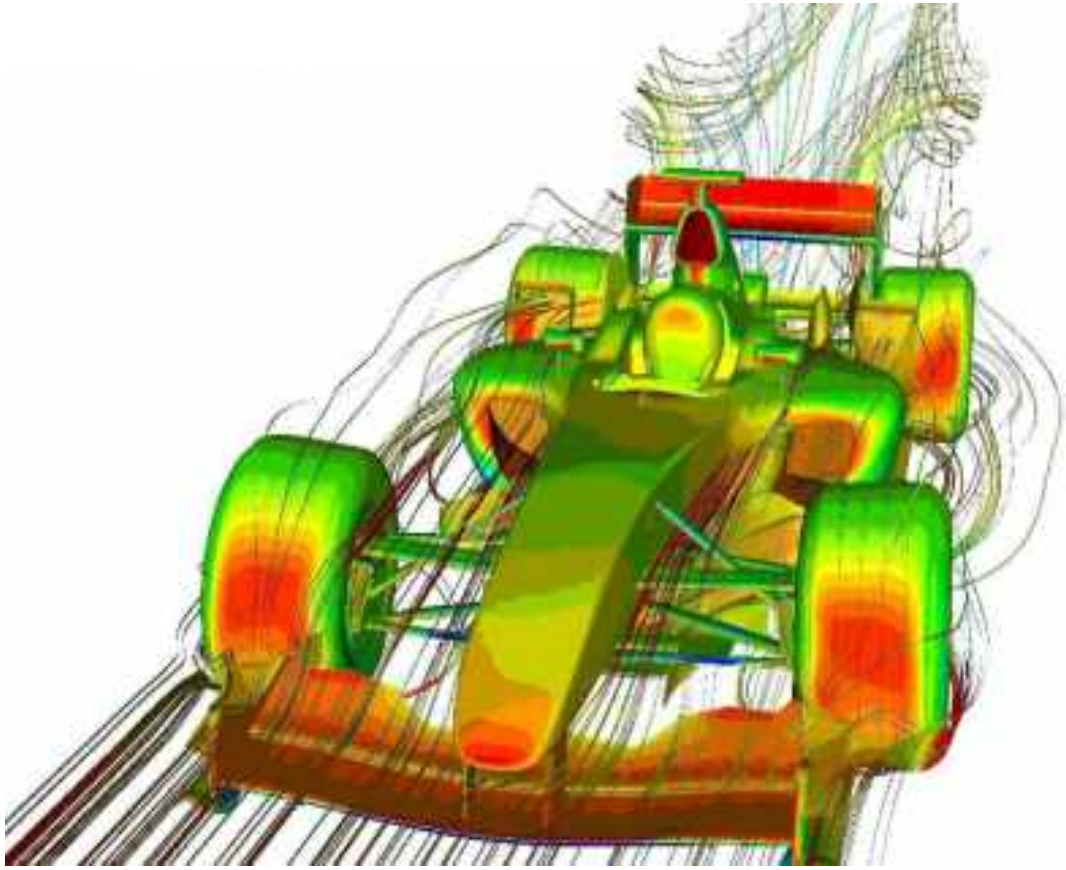
- **Benefits**
  - **Tour of the Wind Tunnel**
  - **Tour of the Assembly Floor**


# Thesis – Fluid-Solid Interaction of Bioprosthetic Heart Valves




# Future Plans

- Graduate
- Get a job in engineering
- Maybe do a PhD
- Work in the area of computational fluid dynamics
  - Designing planes, cars, etc.



# Thanks for Listening!