

# DOUW MARX

## Mechanical Engineer

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Pretoria, South-Africa

<https://douwmarx.github.io/Ideas/>

## EDUCATION

### Masters in Mechanical Engineering

#### University of Pretoria

Jan 2020 – Present

Pretoria, South-Africa

- A hybrid approach to vibration based prognostics in planetary gearboxes
- Extracurricular courses attended
  - AFFIRM 2020: Africa Summer School on Machine Learning for Data Mining and Search

### Honours in Mechanical Engineering (with distinction)

#### University of Pretoria

Jan 2019 – Dec 2019

Pretoria, South-Africa

- 78 % average
- Courses taken in machine learning, control systems, vibration based condition monitoring, numerical methods and mechatronics.
- Extracurricular courses attended
  - MAR101: Basic Nonlinear Analysis Using Marc and Mentat
  - CHPC winter school in parallel computing
  - Udemy: Python Beyond the Basics: Object-Oriented Programming
  - Coursera: Bayesian Statistics: From Concept to Data Analysis University of California, Santa Cruz

### B.Eng Mechanical Engineering (with distinction)

#### University of Pretoria

Jan 2015 – Dec 2018

Pretoria, South-Africa

- Top 4% in class of 450
- Final year elective in optimisation

## SKILLS

### Programming

Python

Matlab, Octave

C++, Mathematica



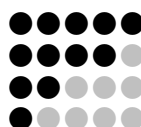
### Simulation and CAD

Solidworks

MSC Marc, PyMentat

Autodesk Fusion, Siemens NX

Ansys, Star CCM+ (DEM)



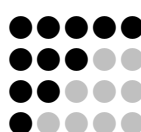
### Tools

LaTeX

MicroPython, Arduino

Version control with Git

Vim



### Manufacturing

Machining (Manual, CNC), Welding



### Languages

Afrikaans, English



## ACHIEVEMENTS

- The University of Pretoria is applying for a patent for one of my novel inventions
- GRE, General test scores - Verbal reasoning: 159 (83rd percentile), Quantitative Reasoning: 162 (79th percentile)
- ESTEQ EEC 2019 presentation: Walking Wheelchairs and low maintenance milling machines? Introducing a novel planar mechanism

## AFFILIATIONS

- The South African Institution of Mechanical Engineering (SAiMechE)
- Association for Computing Machinery (ACM)

## POSITIONS HELD

- Sonop Residence House Committee Member 2017-2018

## INTERESTS

- **Music**
  - Trumpet (Unisa Grade 8)
  - Singing, Guitar, Bass.
- **Community Service**
  - Rotoract Pretoria East member 2019
  - Volunteer tutoring 2019
  - Sonop - "Reach out and give" community service Garri of the year 2018
  - Sonop - Service Garri of the year 2017
- **Other**
  - Woodworking
  - Mechatronics projects
  - Hiking

## REFERENCES

- **Professor Nico Theron**, University of Pretoria - nico.theron@up.ac.za, +27 12 420 3309
- **Professor Stephan Heyns**, University of Pretoria - stephan.heyns@up.ac.za, +27 12 420 2432
- **Peet Kruger**, University of Pretoria Mechanical Engineering laboratories manager - peet.kruger@up.ac.za, +27 12 420 2088
- **Professor Nico Wilke**, University of Pretoria - nico.wilke@up.ac.za, +27 12 420 2861
- **Tonie Viljoen**, Head of Sonop Residence - toniev@sonop.org.za, +27 84 450 1473