# Thomas Carstens Curriculum Vitae

# Mathematics & Statistics EDUCATION UNIVERSITY OF CAPE TOWN | BSc. (Honours) IN MECHANICAL & MECHATRONIC ENGINEERING 2015-2018, Cape Town | Cum Laude distinction

# INTEREST USER-CENTRED DEVELOPMENT OF IOT

Mechanics

Physics & Electronics

Mechanical

& Mechatronic

Design

Age 23

Nationalities South African

French

Based in Code B driver Languages Cape Town
Since Feb 2015
English(Native).

pendant

Research

French (Native), Spanish (C2 level)

#### SOFTWARE DEVELOPMENT

Languages C, Python

Angular, Assembly

Javascript (ES6) Typescript

Frontend Redux, ReactJS

React Native, Ionic

#### SYSTEM DEVELOPMENT

CAM NI LabVIEW Python, Matlab Numerical modelling MathCAD Multifunction I/O NI USB-6009 Signal conditioning NI DAQ-mx Control system SimulC Data acquisition NI DAQ-mx Stats computing MCUs

MCUs STM32, Arduino 3D modelling Solidworks
Circuit Design LTSpiceVI

#### **CURRENT MOOCS**

Deep Learning Python
Backend NodeJS
VCS Git
Database MongoDB
Infrastructure Docker

# members. CAMPS BAY HIGH SCHOOL | National Senior Certificate (SA)

As the Main Head of Marketing at UCT's Society for Effective Altruism. I.

initiated a series of weekly discussion events to explore ways people and institutions can improve the world. This attracted our first 20 regular

See online portfolio (link above) for a selection of projects
Full transcript of engineering courses available on request

 1st Team Field Hockey, Provincial Chess and 1st Team Captain, 1st flautist in Chamber Orchestra and School Band

FRENCH DISTANCE EDUCATION (CNED) | NATIONAL DIPLOMA (FR) 2007-2012, Cape Town

#### **EXPERIENCE**

2011-2014, Cape Town | 7 distinctions

### PURPLE DOT LIGHTING DESIGNS | Engineering Intern Jan 2016 | Johannesburg

Pick-up Sticks is a custom light fitting that was commissioned by PDL Designs. I manufactured the fitting: from machining, electrical wiring to finishing.

## CAPE TOWN TUTORS & TEACH ME 2 | ACADEMIC TUTOR Feb 2016 - Present | Cape Town Area

Individual tutoring in high school/university Mathematics, English and French, tallying 200+ hours. Intensive tutoring of 4 students in particular.

## CAPE PENISULA UNIVERSITY OF TECHNOLOGY | TRAINEE November-December 2017 | CPUT Bellville Campus, Cape Town

A training course to provide practical experience in CNC, pneumatics, machining, lathing, turning and TIG welding.

## SENIOR RESEARCH PROJECT | RESEARCHER & COORDINATOR Feb 2018 - Oct 2018 | Mechanical Engineering Department, Cape Town

I proposed a project to design and develop Dynamics App, a mobile app for off-campus student-tutor interaction. The students post their questions on a feed of posts and comments, and in so doing, notify the tutor on their phone. Under supervisor Bruce Kloot, the app was implemented in two undergraduate engineering courses at UCT. I adopted a qualitative framework to survey and interview course members. I iterated five app versions from these insights.

#### **AWARDS**

2018	Cum Laude (Honours)	2014	Highest Marks in June and
	distinction in Engineering		September Examinations
2018	Valedictory Speaker (UCT)	2014	Best General Knowledge
2017	Dean's Merit List (2015-2017)	2014	ABRSM Gr. 8 Flute/Recorder
2014	All Rounder Award (CBHS)	2014	40th in SA's English Olympiad