# David de Klerk

## Education

2019 PhD in Physics, University of Cape Town
2014 MSc in Applied Mathematics, University of Cape Town
2009 BSc(Honours) in Theoretical Physics, University of Cape Town
2008 BSc in Physics, University of Pretoria

## Work and Research Experience

2023-Present **Research Software Engineer**: School of GeoSciences, University of Edinburgh
I am a member of the School's IT team and support software development that relate to the research activities of the School. I have been involved in the following activities:

- Software development on internal calls for early stage research projects. Typically 2-5 projects every 3 months.
- Deployed, optimized and developed pipelines for climate and atmospheric chemistry models running on HPC infrastructure.
- Supported the transition to a small Slurm based compute cluster.
- Delivered technical workshops related to HPC and software development.
- Supporting the day to day research computing needs within the School.

2020-2022 **Post-doctoral Research Associate**: Glasgow Computational Engineering Centre, University of Glasgow
I worked on an open ended project that aimed to reduce the computational cost of Discrete Element Method (DEM) simulations by coarsegraining particle dynamics. For this project I prototyped a new numerical method for granular materials in Python and making detailed comparisons to results from open source packages. Additionally, I was also involved in supervising MSc projects in granular flow modelling using DEM where I provided reproducable computational environments with Docker containers.

2019 **Post-doctoral Research Fellow**: Department of Chemical Engineering, University of Cape Town
This project aims to extend results from my PhD work to industrial comminution circuits.

2015-2018 **PhD Candidate**: Department of Physics, University of Cape Town
For my thesis topic I investigating several aspects of granular materials in fluid suspension using Positron Emission Particle Tracking (PEPT) experiments and Discrete Element Method (DEM) simulations.

2013-2014 **Research Assistant**: Department of Physics, University of Cape Town
I was heavily involved with the research activities of the applied physics group. New models for granular flow were studied and developed, particularly in the context of tumbling mills used in the mining industry. My PhD topic grew as an extension of this work. My responsibilities included:

2012-2013 **Programmer**: Fuzzy Logic
I was one of two programmers at a startup focusing on the mobile games industry and have been involved with all aspects of the development cycle. We released a mobile game, Soccer Moves, that was rated as the best puzzle game and best spots game in more than 40 countries.