

# Alex de Beer

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## Education

**ME, Engineering Science** 2023–24  
*The University of Auckland*

**BE (Hons), Engineering Science** (First Class Honours, Honours GPA 9.00 / 9.00) 2019–22  
*The University of Auckland*

## Research Experience

**Research Assistant** Nov 2021–Feb 2023  
*University of Auckland Geothermal Institute*

- Evaluated the effects of using geologically consistent prior parameter distributions on the uncertainty quantification of geothermal reservoir models.
- Developed software implementations of algorithms, based on Bayesian statistics, for simulation-based inference of geothermal reservoir model parameters.

## Additional Experience

**Teaching Assistant** Feb 2021–Present  
*The University of Auckland*

- Providing assistance to students during tutorials and marking coursework for several maths and engineering courses.

**Analytics and Insights Intern** Nov 2022–Feb 2023  
*Ministry of Business, Innovation and Employment*

- Developed a prototype dashboard to communicate the relationships between research funding and outputs in New Zealand.

**Data Science Intern** Nov 2020–Feb 2021  
*Xtracta*

- Developed machine learning models for product recommendation, document classification and document de-noising.

## Selected Honours & Awards

**Senior Scholar Award** (2022) *The University of Auckland*  
Achieved a perfect honours GPA.

**First in Course Awards** (2020–22) *The University of Auckland*  
Awarded first in 16 / 32 undergraduate courses.

**Best Poster Award** (2022) *The University of Auckland*  
Awarded first equal in the Engineering Summer Research Scholarship poster competition.

## Skills

**Programming** Python, R, Julia, MATLAB, SQL, C++, C.  
**Tools** Jupyter Notebook, L<sup>A</sup>T<sub>E</sub>X, Git, Excel, PowerBI.

## Talks

### **Ensemble Methods for Large-Scale Nonlinear Optimal Experimental Design**

SIAM Conference on Uncertainty Quantification, Trieste, Italy (2024)

### **Ensemble Methods for Geothermal Model Calibration**

45<sup>th</sup> New Zealand Geothermal Workshop, Auckland, NZ (2023)

### **Geologically Consistent Priors for Geothermal Reservoir Modelling**

48<sup>th</sup> Workshop on Geothermal Reservoir Engineering, Stanford, CA (2023)

### **Using JuDGE for Distribution Network Planning**

20<sup>th</sup> EPOC Winter Workshop, Auckland, NZ (2022)

## Theses

### **Ensemble Methods for Geothermal Inverse Problems**

Master's Thesis (2024)

### **Expansion of Electricity Distribution Networks Under Uncertainty**

Honours Report (2022)