

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^AT_EX, 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
45th New Zealand Geothermal Workshop, Auckland, NZ (2023)

Geologically Consistent Priors for Geothermal Reservoir Modelling
48th Workshop on Geothermal Reservoir Engineering, Stanford, CA (2023)

Using JuDGE for Distribution Network Planning
20th 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)