Grace 3045714N - Summary of work done (past 2 weeks) **08/07/2025**

Report Writing - https://github.com/GraceWangui/msc_dissertation/blob/main/Report/mproj.docx

- Finalized the Introduction chapter, including motivation, and research objectives.
- Completed the Background of Methods section covering traditional predictive, Bayesian, and causal inference modelling.
- Wrote a structured Related Work section, integrating both global and Africa-focused research with academic citations.

Coding- https://github.com/GraceWangui/msc_dissertation/blob/main/src/Models.ipynb

- Constructed a normalized composite skill score based on competence, engagement, training, quality, and confidence.
- Cleaned and encoded about 30 socio-demographic, psychological, and infrastructural features for modelling. (most data is ordinal or categorical so had to be massaged comprehensively)
- Built and evaluated Linear Regression, Random Forest, and XGBoost models to predict the skill score.
- Analyzed and visualized feature importance across these models to identify key skill gap drivers.

Reading/ Research

- Studied Bayesian modelling concepts and workflow using PyMC and the recommended videos and resources.
- Reviewed causal inference techniques and tools like DoWhy for future integration. (only 50% done)
- Examined several peer-reviewed studies on computing skill gaps globally and in Africa.