Sulakshna Devi Umrit

Data Analyst

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About

- Master's graduate bridging advanced quantitative methodology with educational sciences.
- Specialized in complex statistical modelling (HLM, MAIHDA) and International Large-Scale Assessments
- Proficient in Python data science workflows (Pandas, Scikit-learn) for rigorous social science research.
- Passionate about applying mixed methods approaches to investigate and mitigate systemic educational inequality.

Education

Master's in Education - University of Oslo, Norway
Focus: Data Analysis, Quantitative Research in Higher Education Studies Advisors:
Dr. Diego Gonzalez Campos, Dr. Rogers Kaliisa
August 2024 – May 2026

Bachelor's of Science - University of Mauritius, Mauritius
Focus: Specialization in Web and Multimedia Development August 2018 –
May 2020

Work Experiences in Research/Data Science/AI

Research Assistant – CREATE Group, University of Oslo (UiO)
PI: Prof. Monica Melby-Lervåg
Project: Quality of meta-analysis examining effectiveness of interventions targeting academic achievement and behavior in children
October 2026 – Present Oslo, Norway

- Systematic extraction and statistical auditing of effect sizes (d, Hedges' g) and empirical standard errors (SE) across ~170 meta-analyses for a large-scale tertiary meta-analytic synthesis of child interventions.
- Perform advanced statistical conversions and adjustments, including calculating empirical SEs from 95% confidence intervals, pooling independent subgroups via inverse-variance weighting, and accounting for dependent effect sizes.
- Audit dataset integrity by verifying meta-analytic models (Random Effects, Fixed Effects, RVE), resolving coding discrepancies from prior iterations, and creating clean, reproducible datasets structured for downstream modeling in R.

Data Science Intern – Travelling Waves

August 2026 – Present Oslo, Norway

- Assisted in prototyping an AI-driven, automated research pipeline specifically designed to streamline the data analysis process for large-scale international assessments, utilizing the OECD PIAAC dataset as a primary test case.
- Programmed custom computational tools that enable Large Language Models (LLMs) to autonomously generate and execute complex statistical scripts (in Python), bridging the gap between raw survey data and analytical output.
- Contributed to an automated variable-mapping system (Retrieval-Augmented Generation), which algorithmically parses extensive OECD codebooks to ensure that complex survey variables are accurately identified and utilized.
- Implemented a rigorous verification workflow that cross-checks AI-generated research insights against deterministic statistical outputs, effectively eliminating AI "hallucinations" and ensuring strict academic validity.

Research Assistant – Knowledge Centre for Education, University of Stavanger (UiS)
PI: Assoc. Prof. Diego Gonzalez Campos
Project: The Role of Physical Activity in Grades 1–4: A Systematic Knowledge Synthesis on Children's Attention, Self-Regulation and Executive Functions

July 2026 – Present Oslo, Norway

- Contributed to a Ministry-commissioned umbrella review designed to translate complex empirical evidence into actionable educational policies for Norwegian schools.
- Conducted rigorous title, abstract, and full-text screening of systematic reviews and meta-analyses, strictly applying predefined methodological inclusion criteria.
- Participated in reviewer consensus discussions to resolve discrepancies in study eligibility and ensure consistent application of screening criteria across the review team.
- Documented and evaluated study eligibility decisions during full-text screening, providing clear methodological justifications for inclusion or exclusion.

Work Experiences in Education

Teaching Assistant – French School in Oslo

August 2023 – July 2024 Oslo, Norway

- Assisting the teacher in implementing lesson plans and activities.
- Preparing and organizing instructional materials and resources.
- Individualized support to students who may need extra help.
- Communicate effectively with both students and parents.
- Health and safety management by administering basic first aid when necessary and report any incidents to the teacher.

Computer Science Educator - Ministry of Education, Government of Mauritius

March 2022 – December 2022 Mauritius

- Conducted Python and HTML programming lessons for high school students.
- Adapted learning methods to students' knowledge levels, ensuring effective outcomes.
- Assessed student performance while providing feedback and remedial support.

- Maintained discipline, created a positive learning environment, and engaged with parents on student progress.

Information and Communication Technology Educator (ICT) - Government of Mauritius

September 2017 – February 2022 Mauritius

- ICT Education to Grades 1-6: designed lesson plans and conducted assessments.
- Managed school ICT infrastructure, hardware, software, and network issues.
- Provided technical support and troubleshooting for students and staff.
- Maintained ICT labs, installed software, and ensured system functionality.

Relevant Projects

Agentic Research Pipeline: Autonomous Exploration of Social Science Datasets (PIAAC)

August 2026 - Present Oslo, Norway

- Contributed to the prototyping of a LangGraph-based workflow aimed at streamlining the data analysis pipeline for high-dimensional survey datasets.
- Assisted in writing and testing Python/R scripts that allow Large Language Models (LLMs) to interact with and process Large-Scale Assessment (LSA) data.
- Helped build an initial Retrieval-Augmented Generation (RAG) pipeline, using vector embeddings of OECD codebooks to improve variable mapping and search accuracy.
- Supported the testing and evaluation of automated verification workflows, helping to align LLMgenerated text with actual statistical outputs to reduce factual errors (hallucinations).

Master Project: Analysis of PIAAC Datasets in Norway

May 2025 – May 2026 Oslo, Norway

- Large-Scale Data Engineering: Processed and optimized OECD PIAAC datasets using Python, implementing complex survey weighting and plausible value adjustments to ensure high-fidelity statistical accuracy
- Advanced Predictive Modeling: Developed and evaluated regression models and hierarchical linear structures to identify variance in performance metrics and group-level effects.
- Multilevel Intersectional Analysis: Applied MAIHDA (Multilevel Analysis of Individual Heterogeneity and Discriminatory Accuracy) to uncover hidden patterns and intersectional inequalities within complex population segments.
- Data Visualization & Insight Communication: Engineered interactive visualizations and comprehensive reports to translate complex statistical outcomes into actionable insights regarding labor-market trends.

Project: Mobile Usage and Behavior Analysis

January 2025 Oslo, Norway

- Conducted exploratory and behavioral analysis to uncover usage patterns across different user segments.
- Engineered features and trained machine-learning models to predict mobile engagement and usage frequency.
- Designed interactive dashboards and visual narratives using Plotly to support data-driven decisionmaking.

Technical Skills

Scientific Computing: Python (NumPy, Pandas, Scipy, PyTorch, Scikit-learn), Statistical Modeling, Predictive Analytics, Machine Learning

Agentic AI & LLM Tools: Agentic AI workflows, Local LLMs, LLM APIs/Providers, OpenRouter, LangGraph, Retrieval-Augmented Generation (RAG), Tool Calling

Data Visualization: Matplotlib, Seaborn, Plotly

Development & Deployment: Docker, Git/GitHub

Web Development: PHP, MySQL, HTML, CSS

Code Reproducibility: Github

Languages

English: Full Proficiency

Creole / French: Native Speaker

Norsk Bokmål: Intermediate