Dr. SUMAN GAJUREL

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I am detail-oriented agriculture scientist with expertise in soil and crop science, soil degradation identification and management, agricultural systems modelling, big data analysis, and data presentation. Dedicated to collaborating with cross-functional teams to address research and agricultural issues, delivering high-quality strategic solutions to overcome challenges and drive growth.

EXPERIENCE

RESEARCH SCIENTIST

Department of Primary Industries and Regional Development (DPIRD) | Perth, WA | 2025 APR - Ongoing

- Support agricultural research by assisting with experiments, data analysis, and economic evaluations to improve sustainable production and industry practices.
- Engage with stakeholders such as farmers, agribusinesses, and research bodies, and help communicate research findings through media, reports, and events.
- Apply decision support tools and models (including APSIM) for farming systems analysis, and evaluation of technologies and processes.
- Contribute to project and operational tasks, including reporting, budgeting, staff supervision, collaboration, and participation in emergency and biosecurity responses.

LAND RESOURCE SCIENTIST

Department of the Environment, Tourism, Science and Innovation (DETSI) | Soil and Landscape | QLD Government | Brisbane, QLD | 2024 NOV – 2025 MAR

- Apply digital soil mapping, biogeochemical/crop modeling, machine learning, and remote sensing for land suitability and soil monitoring.
- Use R or Python for data management, quality control, and method improvement.
- Design and execute soil science projects, including surveys and sampling in remote areas, with field trips lasting up to two weeks.
- Manage project phases from proposals to final reports and produce scientific documents and mapping products.
- Maintain advanced data collection and storage standards for the department.

RESEARCH ASSISTANT

University of Southern Queensland | Toowoomba, QLD | 2024 JULY – 2024 OCT

- Data collection for sesame and sugarcane modelling.
- Organise raw data from trial sites at Emerald, Tully, Kununurra, and Katherine into a usable format for sesame crop modelling.
- Develop APSIM simulations for all sites and years to calibrate and validate the model.
- Predicting soil properties information using pedo-transfer functions to feed into APSIM simulation.
- Running APSIM simulations under various farm management scenarios.

DOCTORAL RESEARCHR
University of Southern Queensland | Toowoomba, QLD | 2021JUL – 2024 JUL

- Collating farm management data and soil test data from various sources including government agencies and organise it into a usable format.
- Building APSIM simulation for paddocks located across grain growing regions.
- Writing R scripts to optimise soil properties of APSIM in R environment to predict soil hydraulic parameters.
- Writing PBS scripts to run APSIM optimisation function in High Performance Computing environment.
- Extracting environmental and soil properties data from national databases.
- Writing R scripts to analyse big data and to build machine learning models for multiple soil chemical properties to diagnose chemical constraints.
- Scientific paper writing for each outcome, report writing and conference presentations.

AGRONOMIST
SLISA Nepal | Kathmandu | 2016 – 2018

- Provide agronomic advice to farmers.
- Agronomic and technical support on insect and disease management
- Identifying agricultural problems and provide chemical and fertiliser recommendation.
- Promote branch staff upskilling by providing technical advice and product recommendations.
- Establish, develop and maintain clients, government and stakeholder relations

EDUCATION

PhD, Agriculture Science, JULY 2024
Joint PhD University of Southern Queensland (UniSQ), and Soil CRC

MSc (Dryland Agricultural Systems), Digital Soil Mapping, FEB 2021
Curtin University, WA, Australia

BSc (Hons) Agriculture, Plant Protection, OCT 2017
Purbanchal University, Kathmandu, Nepal

TECHNICAL SKILLS

- **Ag system model:** APSIM, ARM Online, GYPSY
- **Programming language:** R programming
- **GIS:** ArcGIS, SAGA GIS
- **Tools:** Git, Vs Code, HPC, Latex, C++, HTML, React,

KEY STRENGTHS

- Technical proficiency
- Collaborative team player
- Problem solving skills.
- Attention to detail

CERTIFICATES

- **Soil Judging Competition** – Dec 1, 2, & 3, 2022, Soil Science Australia
- **Hands-on Digital Soil Mapping** – May 2021, ISRIC
- **Satellite Remote Sensing for Agricultural Applications** – Apr 14, 21, 28 & May 5, 2020, NASA
- **Introduction to Remote Sensing** – 06 April, 2020, GEO University
- **Biometrics and Experimental Designs in Agriculture** - Dec 01 to Dec 05. 2017, California State University, Fresno, USA
- **Organizational Management and Leadership -** 08 - 10 April, 2017, National Youth Federation, Nepal

AWARDS AND SCHOLARSHIPS

- Soil CRC Research Scholarship
- University of Southern Queensland (UniSQ) Research Scholarship

PUBLICATIONS/CONFERENCE

- A cost-effective approach to estimate plant available water capacity. Link https://doi.org/10.1016/j.geoderma.2024.116794
- Cost-effective approach to estimate plant available water capacity **[Presentation].** Link https://conference.soilscienceaustralia.org.au/wp-content/uploads/2023/06/2023-SSA-Oral-Abstract-Book.pdf