DINESH GULATI

#20, ZIRA GATE, FEROZEPUR CITY, PB, INDIA

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EDUCATION

Master of Technology in Soil and Water Engineering   April 2021

Punjab Agricultural University (PAU), Ludhiana, India

OCPA: 8.29/10

> **Thesis Title:** "Simulation of groundwater recharge from transplanted and direct seeded rice fields"
>
> **Advisor:** Dr. Sanjay Satpute

Bachelor of Technology in Agricultural Engineering   June 2018

Punjab Agricultural University, Ludhiana, India

OCPA: 7.81/10

> **Project Title:** "Comparative field evaluation of different straw management technologies in combine harvested paddy field under different straw conditions"
>
> **Advisor:** Dr. M.K. Narang

RESEARCH INTEREST

- Remote Sensing and GIS-based applications for water resources
- Machine learning applications in agriculture
- Irrigation water management
- Monitoring and modeling of soil water in an unsaturated zone
- Integrating micro-controller based sensors for water management

RESEARCH EXPERIENCE

Senior Research Fellow   May 2021 –

Department of Soil Sciences, PAU   May 2022

- Planning and managing field experiments under micro irrigation systems in open fields and under-protected structures
- Developed numerous low-cost microcontroller-based sensors to observe climate and agriculture parameters
- Coordinate with other Ph.D. and Masters students to assist them in their research
- Conduct on-field practical classes for Bachelor students

Master's Research   August 2018

Department of Soil and Water Engineering, PAU   – April 2021

- Field experiments were conducted for direct-seeded rice (DSR) and transplanted rice
- Collect and access daily soil moisture data using Delta PR2 moisture probe.
- Water budgeting to estimate and compare potential groundwater recharge.
- Simulation of potential groundwater recharge using HYDRUS-1D

HONORS AND AWARDS

- ISTE National award for **best M.Tech thesis** in Agricultural Engineering   2021
- Qualified Senior Research Fellow (SRF) examination conducted by Indian Council of Agricultural Research (ICAR)   2020 & 2021
- Qualified National Eligibility Test (NET) conducted by ICAR   2019
- Recipient of **Merit certificate** in Postgraduate degree with OCPA of 8.29
- Eligible for the recipient of a **Gold medal for securing first rank in Postgraduate degree**
- Recipient of University Merit Scholarship during Postgraduate degree as well as Undergraduate degree
- Recipient of Merit certificate in Senior Secondary with score of 87.78%

PUBLICATIONS

Gulati, D., Satpute, S., Kaur, S. et al. Estimation of potential recharge through direct seeded and transplanted rice fields in semi-arid regions of Punjab using HYDRUS-1D. *Paddy Water Environ* 20, 79–92 (2022). https://doi.org/10.1007/s10333-021-00876-1

ACADEMIC TRAINING DETAILS

- Completed **specialization on Deep learning** offered by deeplearning.ai on Coursera
- Completed courses related to machine learning with python and fundamentals of R-programming on Udemy
- Attended online course on Real Water Saving in Agriculture (REWAS) organized by FAO and FutureWater
- Attended short course on Geospatial technology for hydrological modelling conducted by Indian Institute of Remote Sensing
- Attended short course on Geospatial modelling for watershed management conducted by Indian Institute of Remote Sensing
- Attended IoT workshop by precision Farming and Development Centre sponsored by NCPAH, Ministry of Agriculture and Corporation, GOI held at Punjab Agricultural University, Ludhiana
- **In-house training -** Attended in-house training of 15 days at College of Agricultural Engineering and Technology, PAU about various components and working of farm machinery, irrigation equipment and processing of post-harvest food
- **Summer Practical Training -** Completed four-week training program at Product Training Centre, TAFE, Chennai on basic working principles of Tractors and Farm Implements

TECHNICAL SKILLS

- Proficient in HYDRUS
- Adequate experience with Arc GIS, Google Earth Engine, and CROPWAT
- Experience with Arduino UNO and NordMCU for IoT applications
- Experience with Python language with emphasis on data analysis, machine learning, and deep learning
- Familiar with R-programming
- Proficient in Microsoft Office

LANGUAGES

English: Proficient
Hindi: Fluent
Punjabi: Fluent

REFERENCES

Dr. Sanjay Satpute, Scientist
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Dr. Rakesh Sharda, Principal Scientist
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Dr. Samanpreet Kaur, Associate Professor
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