



# IDP-NAHEP Pantnagar Updates

G. B. Pant University of Agriculture & Technology  
Pantnagar 263145, Uttarakhand

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## Message of IDP Leader, GBPUAT, Pantnagar

### Individual Performance Drives Institutional Performance

In the last 60 years of its evolution, G.B. Pant University of Agriculture and Technology, Pantnagar has made tremendous efforts to develop an ecosystem of excellence. Excellence in teaching, research and extension has been the mandate. The untiring efforts of thousands of individuals, their commitment and conviction has built the University and established it as an institution having one of the highest brand values in agricultural education. It is indeed a fact that exemplary individual performances gradually build up the institutional performance, and the individual performance grows within an ecosystem of excellence. The IDP-NAHEP project running in the University has worked as a catalyst to strengthen the individual performances and thereby the institutional performance of the University. In terms of opportunities for collaborations with experts from leading institutes of the world, honing competencies for digital teaching-learning and pursuing research in advanced technologies, an aura of pursuit of excellence emerged emphatically. The faculty members of the University were highly benefited and their teaching and research performance saw a praiseworthy growth. I am hopeful that this symbiotic connect of individual and institutional performance will continue to prosper.

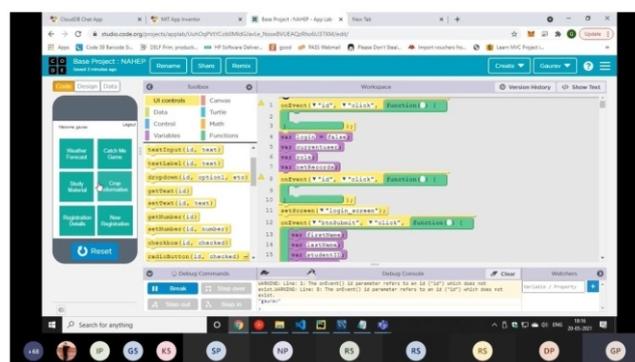


(Tej Partap)

## 10 Days Training Organized by IDP Pantnagar on Applications of Machine Learning

A ten days online training was organized on *Applications of Machine Learning in Agriculture* from June 10-19, 2021. The training was managed by the Agri-Informatics Component of IDP-NAHEP, Pantnagar and was held under the guidance Dr. Prasenjit Dey, Assistant Professor, Cooch Behar Govt. Engineering College, West Bengal. The training was focused towards covering the realistic approaches to solve agricultural problems using machine learning algorithms. The training content was a blend of theory and hands-on practice sessions.

The ten days online training programme initiated with an interactive discussion on scope of machine learning in agriculture, different machine learning strategies and already existing applications of machine learning. The basic technical concepts of



machine learning, learning algorithms and regression analysis were the highlights of the second day of the training programme. Following few days of the training were specifically focused towards problem formulation and usage of regression models in problem

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## 5 Days Workshop on Techniques of Building Successful Self-Profile

### IDP-NAHEP Writing Studio Conducted the Workshop

In continuance of the efforts of the IDP-NAHEP Writing Studio to improve and nurture undergraduate students into proficient writing skills, the third workshop was organized. A 5 days online workshop on the topic *How to build Successful Self Profile* was yet another effort in this direction. The workshop was led by Dr. Shweta Gupta, Managing Director, Arohana Management Solutions Pvt. Ltd., Dehradun and Fellow, IIM Indore. During the workshop, the participants got insights on employability related soft skills and hard skills for the workforce of the present age, the concept of profile, distinctions of biodata, curriculum vitae and resume, designing of biographical sketch and letter of recommendation. Dr. Gupta kept the workshop very interactive focusing upon the do's and don'ts, supporting testimonials, designing the content, generating supporting evidences and many other intricate as well as crucial

aspects to be considered while designing all formats of one's profile. Dr. S.K. Guru, Nodal Officer (Academic), IDP-NAHEP, Pantnagar stated that designing a strong profile is a very crucial skill and working upon it can yield very good results for the job-seekers. Dr. S.K. Kashyap, PI, IDP-NAHEP, Pantnagar enriched the participants with his insightful words of wisdom. He emphatically stated that an excellent profile emerges from identifying the core skill-sets and mastering them in order to emerge in the area of specialization one is willing to work for. A total of about 60 participants from the University as well as from other educational institutions attended the workshop and generated rich insights in context of self-profile development.



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formulation. The expert demonstrated the implementation of linear regression model and polynomial regression model in estimation of crop yield in Python programming language. From day five onwards, the expert had a detailed discussion on concepts classification in agricultural applications and concepts behind k-nearest neighbour classifier. He also implemented a k-nearest neighbour classifier to classify different plant species in Python language. On further days, Dr. Dey explained different performance evaluation metrics in classification problem, concepts of sensitivity and concepts of confusion matrix, precision and recall. A demonstration was done on day seven to compute different performance metrics such as accuracy, precession, recall, AUC curve, ROC curve, etc. He even explained concepts of data science in agriculture, discussed different data processing

strategies, explained dealing with missing values by using various machine learning techniques and introduced support vector machine classifier. On day nine few other demonstrations were conducted. How to read an image file, how to load the agricultural image data and how to implement a machine-learning model all using the Python language, and how to classify diseased crops from crops images using SVM classifier was shown. On the final day of the training, the expert explained and used SVM and KNN classifiers to classify different diseased plants from plant disease grey scale dataset as well as color dataset. Participants were even trained on creating applications for crop and weed discrimination, crop disease identification and crop yield forecasting.



More than 60 students attended the ten days long training programme. This intensive and involving training programme was appreciated by all the participants. The training programme was coordinated by Dr. R.S. Rajput, Member, Agri-Informatics Component, IDP-NAHEP, Pantnagar.

```
linear_regression.ipynb
File Edit View Insert Runtime Tools Help All changes saved
+ Code + Text
# Import modules
from sklearn.linear_model import LinearRegression
from sklearn.model_selection import train_test_split
from sklearn import datasets, linear_model
from sklearn import preprocessing

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.10, random_state=0)
# instantiate
linreg = LinearRegression(normalize=True)
# fit the model to the training data (learn the coefficients)
linreg.fit(X_train, y_train)

LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=True)
| | fit metrics
np
```

## Webinar Organized on the Occasion of World Environment Day

On the occasion of World Environment Day 2021, the Language Lab Component of IDP-NAHEP, Pantnagar organized a four days online webinar and competition under the theme Environmental Consciousness in France from June 07-10, 2021. The expert of the webinar was Ms. Shubhra Kukreti, Assistant Professor, Doon University, Dehradun. On the first day of the webinar, students learnt many expressions with plants and animals and also some vocabulary pertaining to environment in French. They even made different examples using those expressions that are used in day-to-day life like 'J'ai la banane' (I am feeling happy) / 'Je me couche avec les poules' (I go to bed early). Then on the second day, the expert explained the concept of 'Agriculture Biologique' (Organic Farming) in French. Students learnt some natural techniques used by French people to enrich the soil quality such as usage of green manure, 'sufficient land area for a crop, practice of crop rotation, and manual/technical weeding. The expert added how organic agriculture and the rearing of livestock are booming, providing 134,000 jobs in terms of direct employment. She told the students about 'Agriculture Biologique' also known as 'AB', a certification body of organic products in the country. Students got to know that some of the popular fruits and vegetables that do not grow in the country like banana, mango, and pineapple etc. are imported from

the countries like Guadeloupe, Madagascar, La Reunion which are the overseas territory of France. On third day of the webinar 'Green Tourism /Eco-Tourism in France' concept was explained. Students learnt how it is unique in terms of the common tourism as it focuses on nature and ecology. The



Ms. Shubhra Kukreti  
Assistant Professor  
Doon University, Dehradun

expert who completed her Masters degree in France explained the students how collective means of transport such as train, bus, auto cars and car-pooling is a common activity in France (especially during the vacations) with the aim to preserve environment. She explained that the French government also promotes 'cycle tourism' providing the cyclists several advantages like free stay (along with healthy breakfast) in a hotel reserved only for cyclists. Students learnt about 'Wwoofing' (World Wide Opportunities on Organic Farms) network all across globe that provides volunteers the first-hand experience in an organic farm along with free home stay. The webinar ended with an online quiz competition on the fourth day where twenty-five students from A1-A2 level of the French language course participated. Winners were declared at the end of the session.





## From Idea to Revenue: Startup Week Held for Pantnagar Students

The workshop entitled *Startup Week: From Idea to Revenue* was organized by Innovation and Incubation Centre of IDP- NAHEP, Pantnagar from June 2-8, 2021. The workshop was conducted by Mr. Shishir Rawat, who has served as Professional Service Manager, Coveo in Montreal, Canada and has more than 15 years of corporate work experience. He is now serving at Antler, which is a global early-stage venture capital firm. Dr. Aman Kamboj, Project Scientist, IDP-NAHEP, Pantnagar introduced the speaker and brought the work done by the speaker and his significant contributions into limelight.

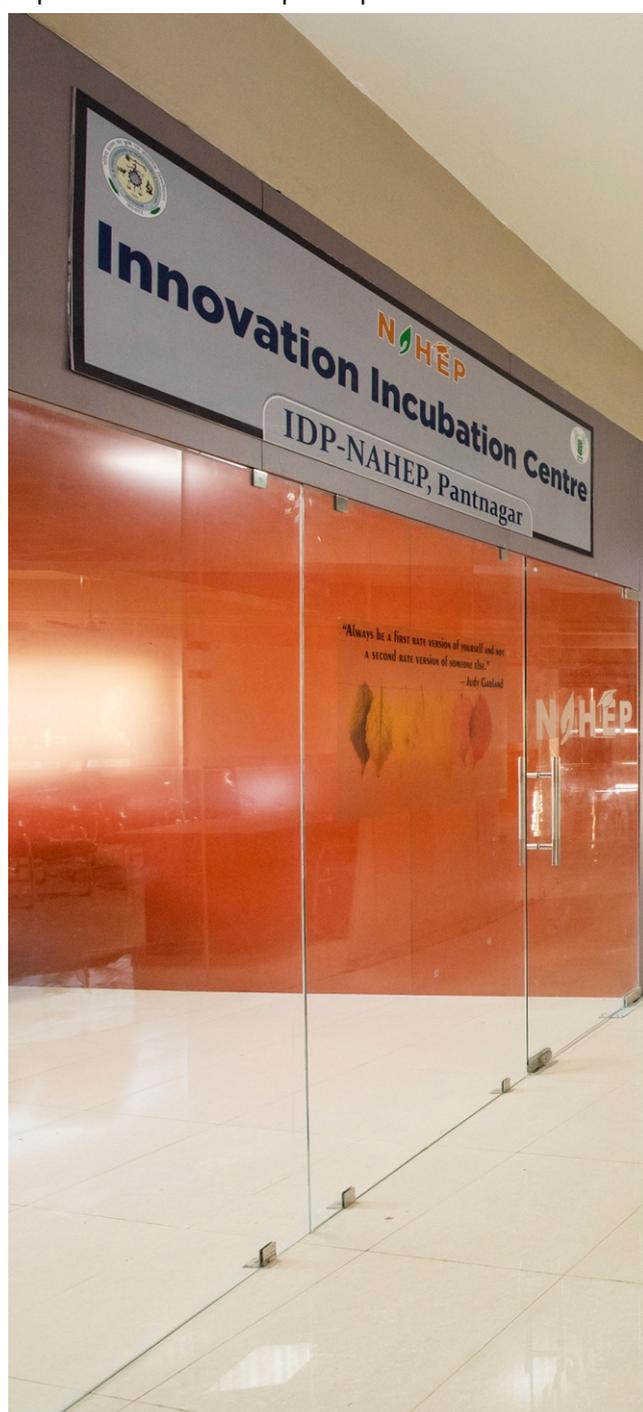


Mr. Rawat started the workshop by emphasizing on concepts like search for ideas and evaluating the ideas. He further discussed about developing a 'solve problem first' mentality, understanding the nuances of business through different parameters, validating POC's through live customer interactions, building an investor friendly pitch deck, identifying go-to-market strategies for new products/services and generating the ability to pitch an idea in front of a group and conveying its value proposition. The second day of the workshop was more activity-based. Using different activities, concepts of elevator pitch and lean canvas models were taught. Also, different case studies of startups were taken as examples. On day three and four, the expert highlighted about the market fit of the products, and participants had a hands-on practice session of techniques of idea validation and pitch deck presentation. The different revenue models were thereafter mentioned by the expert on the fifth day of the workshop. How competitors affect businesses, how government policies influence the revenue, and how should one select or modify an appropriate or existing revenue model. The last two days of the workshop were focused towards reviewing the business models prepared by the participants along with some critical feedback and suggestions for improvement in their pitching plans.

Dr. A.K. Upadhyay, Professor and Head, Veterinary Public Health and Epidemiology, and Coordinator, Innovation and Incubation Centre, IDP-NAHEP appreciated the efforts of the expert and applauded him for providing such an intensive learning experience to the participants. Concluding the session, Dr. Aman Kamboj gave vote of thanks to the expert as well as to the participants.



Mr. Shishir Rawat  
Professional Service Manager  
Coveo  
Montreal, Canada



## Eminent Scientists Guided Students on Advanced Applications of Geospatial Technologies

The Agricultural Informatics component of IDP-NAHEP, Pantnagar organised four days online training on *Applications of Smart Farming Techniques for Enhancing Quality of Agricultural Produces* from June 23-26, 2021. This online training aimed towards providing exposure of smart farming techniques which reduce the ecological footprint in farming community. The training was mentored by three eminent experts, Dr. Arvind Kumar Shukla, Principal Scientist, ICAR-IISS, Bhopal; and two Pantnagar alumni Dr. M.H. Kalubarme, Scientist, Space Applications Centre, Indian Space Research Organization (ISRO), Ahmedabad and Dr. Dharmesh Verma, Former Global Head, Technical, RNZ International, Dubai.

The training commenced with a welcome speech of Dr. A.S. Nain, Coordinator, Agri-Informatics Component. He said that utilization and necessity of geospatial technology is gradually enhancing and such technologies are essential to provide timely, cost effective and precise information about the crops and are thus helpful in increasing crop production. The initial two days of the training programme were handled by Dr. Shukla. He emphasized on the concepts of nutrient management, where trainees got to know about its importance as it is a decision making process essential to the long-term sustainability of agricultural production. The fundamental goal of nutrient management is to identify the most profitable and environmentally sound approach to provide crops with an optimum supply of nutrients. Applications of geospatial technologies were taught by Dr. Kalubarme. He focussed on the importance of geospatial technology that enables us to acquire data that is



Dr. Arvind Kumar Shukla  
Principal Scientist  
ICAR-IISS, Bhopal



Dr. M.H. Kalubarme  
Scientist  
Space Applications Centre  
(ISRO), Ahmedabad



Dr. Dharmesh Verma  
Former Global Head  
Technical, RNZ International  
Dubai

referenced to the earth and is used for analysis, modelling, simulations and visualization. He also sensitized students about the influential role of this technology in the agriculture sector because it helps in increasing yields, managing resources, prediction of outcomes and improving farm practices. This training covered many aspects of emerging technologies such as automated systems, temperature and moisture sensors, aerial images which allow agriculture to be more profitable, efficient, safer and more environment friendly. The last part of the training on Google Earth Engine was handled by Dr. Verma. He emphasized that for solving applied problems in agricultural monitoring and food security, it is important to provide reliable crop classification maps in national and global scale. Earth Engine is an efficient platform for scientific analysis and visualization of geospatial datasets, for academic, non-profit, business and government users. After the session, course material was shared with the participants. The training culminated with the remarks of Dr. Ajay Kumar, Assistant Professor, Department of Agronomy, College of Agriculture and Member, Agri-Informatics component. Around 70 participants attended and benefitted from the four days training programme.



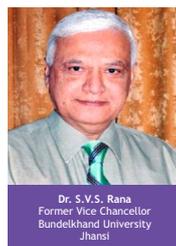


## Webinars Held on Planetary Health Concerns

Sensitizing young generation towards the adverse impact of anthropogenic activities on environmental health, a two days webinar was organized by IDP-NAHEP, Pantnagar in collaboration with College of Fisheries of Pantnagar University on June 7-8, 2021. The webinar was held on the theme entitled *Emerging Issues and Concerns related to Planetary Health*. Two eminent personalities Dr. S.V.S. Rana, Former Vice Chancellor, Bundelkhand University, Jhansi and Dr. Raman Trivedi, Dean Student Welfare, Bihar Animal Sciences University, Patna were the speakers for the webinar.

On the first day of the webinar, Dr. S.V.S. Rana deliberated on the topic Making our Planet Chemically Safe. During his talk, Dr. Rana focused on bringing down the health hazards emanating from nuclear waste, radioactive metals and other toxic elements. Being one of the founding members of the national level committees in putting and building up the case for discussion and deliberation on aquatic and land toxicology, he explained how policies, regulations, laws, frameworks, task forces and national and international level agencies came into existence with committed goals and objectives. He gave detailed account of research insights on bio-magnification process of aquatic life and its impact on oogenesis, reproductive biology, growth, health and development of human race and other living organisms.

On the second day of the webinar, Dr. Trivedi deliberated on Ecological Restoration of Degrading Wetlands. Dr. Trivedi prefaced the topic by giving an account of the issues like habitat destruction, overexploitation, and discharge of effluents in water



Dr. S.V.S. Rana  
Former Vice Chancellor  
Bundelkhand University  
Jhansi



Dr. Raman Trivedi  
Dean Student Welfare  
Bihar Animal Sciences University  
Patna

bodies, land reclamation for commercial uses, climate change, urbanization and many others. He further added that the concept of restoration of wetlands integrates three basic principles i.e., integrity, health and sustainability. Dr. Trivedi stated that the restoration calls for analysis of the population dynamics, species dispersal and biological, physical and chemical relationship between both components for promoting action. He also emphasized that following the approaches of conservation biology, restoration is based on scientific analysis of the situation, and implementation of action plan based on the foundation of strong principles.

Dr. S.K. Guru, Nodal Officer (Academic), IDP-NAHEP, Pantnagar stated that such topics are of relevance to the students and will add value on taking the planetary health issues to a different level. Dr. R.S. Chauhan, Dean Fisheries, GBPUAT, Pantnagar expressed his heartfelt gratitude to the speakers for sharing their views on such important and relevant aspects. Dr. Amita Saxena, Professor and Head, Aquatic Environment Management, College of Fisheries, GBPUAT, Pantnagar and Dr. Vipul Gupta, Project Scientist, IDP-NAHEP, Pantnagar coordinated the event. A total of 55 participants generated insights by attending the webinars.





## The Main Events of July 2021

S. No.	Event	Proposed Date	Venue	Nodal Unit	Convener
1.	Lecture Series on Digital Agriculture for Enhancing Profitability	14-07-2021 to 17-07-2021	Online	Agri-Informatics Team	Dr. A.S. Nain, College of Agriculture
2.	Workshop on Leadership Skills	15-07-2021	Online	Academic Team	Dr. S.K. Guru, College of Basic Sciences and Humanities
3.	Workshop on Effective Presentation Skills	15-07-2021	Online	Academic Team	Dr. S.K. Guru, College of Basic Sciences and Humanities
4.	5 Days Workshop on Skills of Good Writing: Concerns of Micro and Macro Editing	21-07-2021 to 25-07-2021	Online	Academic Team	Dr. S.K. Guru, College of Basic Sciences and Humanities
5.	Two Months NAHEP Online Internship for UG Students	30-07-2021 to 30-09-2021	Online	Academic Team	Dr. S.K. Guru, College of Basic Sciences and Humanities
6.	French Language Course Beginners A1 Level	26-07-2021 onwards	Online	Language Lab Team	Dr. Alka Goel, College of Home Science
7.	French Language Course Advanced A2 Level	26-07-2021 onwards	Online	Language Lab Team	Dr. Alka Goel, College of Home Science
8.	Webinar on Time Management	28-07-2021	Online	Academic Team	Dr. S.K. Guru, College of Basic Sciences and Humanities



## Work Culture: A Distinction of NAHEP Project

**Dr. S.K. Kashyap**

**Dean, College of Agriculture/PI, IDP-NAHEP, Pantnagar**

The World Bank funded IDP-NAHEP project is not yet another project running in agricultural universities across the nation. This project is an intervention of ICAR to take the agricultural research and education to the next level of growth. The IDP-NAHEP, Pantnagar took the differential aspects of this project as sacrosanct and ran this project with a developmental vision and undeterred spirit. The most crucial part of running the project in an exemplary way was generating a distinct work culture. The inspiration and instrumental support for generating this work culture emerged from the NAHEP guidelines. Stringent compliance of rules, target based working, multi-disciplinary team effort, regular evaluation and introspection, proper documentation and publications, need-based programmes and encompassing dimensions of social equity and environmental consciousness, were some of the major tenets of the work culture of IDP-NAHEP, Pantnagar. This work culture helped the project to make a substantial impact on the academic performance, skilling levels, and entrepreneurial acumen of the students of the University. I am assertive that the impacts of the project will go a long way in strengthening the learning ecosystem of the University.

