

BIODIVERSITY INFORMATICS AND ITS APPLICATIONS WITH COMPUTER SCIENCE

DATE: Nov 11, 2022

Biodiversity informatics is a multidisciplinary field that utilizes computer science technology to gather, manage and analyze the data related to the biodiversity field. The primary goal of biodiversity informatics is to increase the understanding of diverse ecosystems present in our Earth as well as various species that inhabit them. Biodiversity informatics helps in developing effective conservation strategies that consider crucial factors such as population dynamics, impact of climate changes, habitat suitability, etc.

Illustrating the connection between biodiversity and information technology, the Computer Science Department at Doon University Dehradun arranged a seminar titled '**Biodiversity Informatics and Its Integration with Computer Science**' on November 11, 2022. The seminar commenced with a welcoming address by Dr. Preeti Mishra, Assistant Professor at Doon University. Subsequently, Mr. Narendra Rawal, the Head of the Computer Science Department at Doon University, delivered a concise introduction to biodiversity informatics. During his presentation, Dr. Rawal threw the light on the interdisciplinary nature of computer science, emphasizing that biodiversity represents one of the interdisciplinary domains where the application of machine learning and artificial intelligence holds substantial promise.



Figure 1. Welcome of Expert by Head of Department, Computer Science



Figure 2. Delivering of keynote address in seminar room

The keynote speaker of seminar was Mr. Neelesh Yadav, a Scientist E and Head of the IT and GIS division at the Forest Research Institute. Mr. Yadav introduced the seminar attendees to the realm of Biodiversity Informatics and the technological advancements employed at the Forest Research Institute. He elaborated on various examples of plant and animal species (Flora and Fauna) and demonstrated how the process of entering data into their databases has become more straightforward and less error-prone, thanks to the utilization of image processing applications. Mr. Yadav addressed inquiries regarding the appropriate data classification methods and further clarified the principles of georeferencing and the standardization of Darwin's core, which serves as a widely accepted language for sharing biodiversity information.

He made the students aware of the way that bioinformatics focused on the Omigs interoperability of scientific name classifications. He also threw light on various informatics centers and their contribution to the Field of Biodiversity informatics. Under the supervision of Dr. Preeti Mishra, assistant Professor, at Doon University the seminar was a success. The informative seminar concluded with the Vote of Thanks delivered by Dr. Preeti Mishra on behalf of Doon University.

GUEST LECTURE ON FUNDAMENTALS OF IOT SECURITY AND ADVANCES USING SDN

DATE: Nov 05, 2022

Drawing attention on the growing technology of Internet of Things and importance of its security, Advanced Cyber Security Research lab, Department of Computer Science, Doon University Dehradun, organized a Guest Lecture on “**Fundamentals of IoT Security and Advances using SDN**” on 5 November, 2022. The Webinar commenced with the Welcome Address by Aditi Pant, student, Doon University. The introductory speech was delivered by Dr. Narendra Rawal, Head of Department, Doon University, on Internet of Things, the concept of Internet of things and its brief history. Following the introductory speech Dr. Preeti Mishra, Assistant Professor, Doon University introduced the keynote speaker, Dr Kallol Krishnan Karmakar.



Figure 1. Students attending the Expert Lecture

The fundamentals of IoT security are most important in ensuring the safe and reliable operation of the Internet of Things (IoT) ecosystem. With the increasing integration of IoT devices into daily lives, securing the interconnected devices against cyber-attacks is crucial. Advances in IoT security, particularly through the utilization of Software-Defined Networking (SDN), offer innovative solutions to increase the security of IoT networks. SDN allows for dynamic network

configuration and monitoring, enabling real-time threat detection and mitigation. The Expert Speaker, Kallol Krishnan Karmakar, Research Lecturer, Advanced Cyber Security Research Centre, University of Newcastle, Callaghan, Australia, introduced the students IoT security. He made the students aware about the network devices, network communication and cloud management Associated with IoT. He also threw light on the security of IoT devices 5G and beyond 5G architecture. He also discussed security issues IoT and dynamic update of policy.

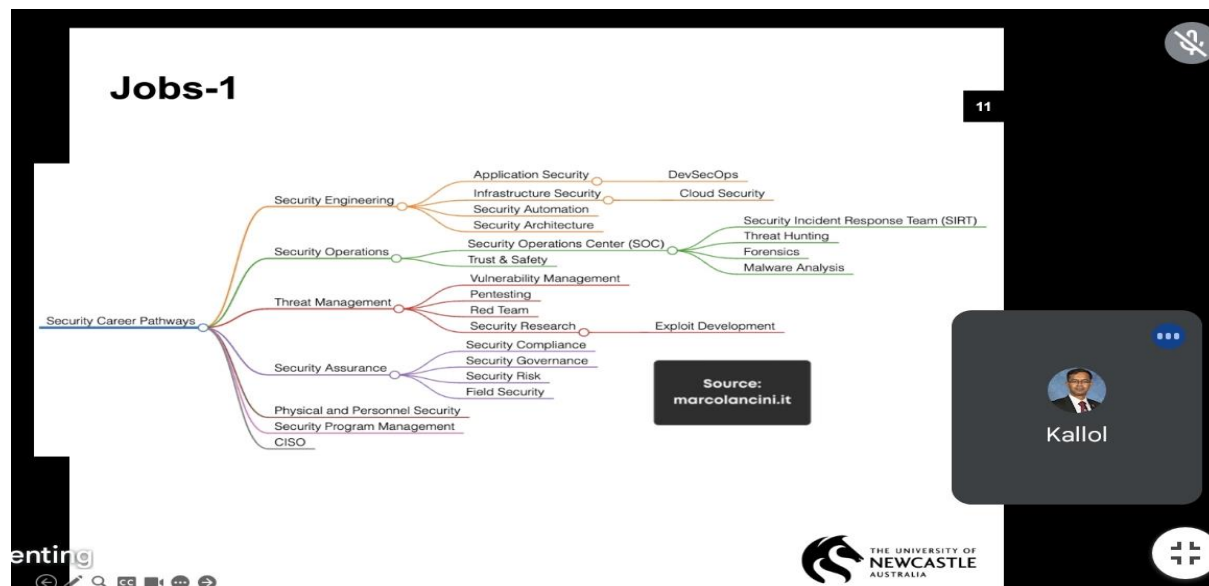


Figure 2. Security job roles

He mentioned the security and reliability of the communication flow and path of ATP attacks, information leakage, API security and block chain-based solution. He also shared about his research contribution and expertise in policy analysis and other aspects of the field. Clarifying the goal IoT of achieving a smart life, better connectivity, information collection and easy accessibility Dr. Karmakar discussed Software Defined Network, it's function and threats. Furthermore, he also provided information on the future scope of IoT and career options in the field. The most crucial part of the lecture was the implementation and emerging research questions in the field. Drawing to a close to his lecture cleared doubt of the students related to this emerging field and its scope.

Under the supervision of Dr. Preeti Mishra, assistant Professor, Doon University and Dr. Neelam Rana, guest faculty, Doon University the seminar was a success.

VIRTUAL POWER SEMINAR ON CLOUD SECURITY TRENDS AND RESEARCH DIRECTIONS

DATE: Dec 18, 2021

Emphasizing on the role of Cloud Security in the era of virtualization, Department of Computer Science, School of Physical Sciences, Doon University Dehradun in collaboration with ICT Academy, organized a virtual power seminar on **'Cloud Security- Trends & Research Direction'** on 18 December 2021. The seminar commenced with the opening remark of Dr. Preeti Mishra, Assistant Professor, Doon University where she welcomed the dignitaries of Doon University, the members of the ICT Academy all the eminent speakers, the faculty of university and spectators of the seminar. Dr. Mishra set forth a brief introduction of the agenda under discussion.



Figure 1. Cloud Security- Trends & Research Direction

The inaugural speech was delivered by Prof. Surekha Dangwal, Vice Chancellor, Doon University and Mr. Kamlesh Singh, State head Academic Operations, ICT Academy. Prof. Dangwal addressed the audience with her words of wisdom and put in the picture how education is being transformed through technology

Mr. Kamlesh Singh, State Head-ICT Academy, introduced the audience with the brief details of the ICT academy and their efforts towards bridging the gap between academy and industry. The students and faculties of member institutions will be provided various opportunities to participate in events, workshops, training and FDPs etc. conducted in collaboration with industries. He also informed the students about the pre training programs the academy is doing and how the students can take advantage of the opportunity provided by the academy.

The first eminent speaker, Mr. Shashank Juyal, Cloud Architect, Microsoft India introduced the students with world of cloud security. He started with the introduction of the Cloud Computing model and how it is making the computing flexible. It stated that Cloud Computing is a pay subscription type service where companies need buy server or set up their own data center on the contrary, they rent it. He also threw light on the security aspect of cloud which is based on three pillars. He further highlighted that the pillar of Cloud Security is to develop a zero (0) trust model specially in the online scenario wherein all employees are working from home beyond the firewall of the enterprises.

The second expert speaker for the seminar was, Mr. Umakant Tripathi, Cloud Architecture, Accenture. He highlighted on other aspects of Cloud Security and employment opportunities in the field. He enlightened the students about how without much investment one can have and enterprise network and infrastructure. He stated various open research challenges in Cloud Computing in which researchers can work on. He gave various examples of tools and use cases to better understand the Cloud Security concerns.

The informative seminar concluded with the Vote of Thanks delivered by Ms. Akanksha Bisht on behalf of Department of Computer Science and the entire fraternity of Doon University. She thanked honorable members of ICT Academy, the hon'ble Vice Chancellor (Prof. Surekha Dangwal) ma'am, Head of Department Computer Science (Dr. Narendra Rawal sir), Dr. Preeti Mishra (Assistant Professor Doon University). A heartiest vote of thanks was delivered to ICT representative Mr. Kamlesh Singh, Mr. Aditya, Relationship manager ICT Academy, Mr. Shashank Juyal and Mr. Umakant Tripathi, the expert speakers of the event.