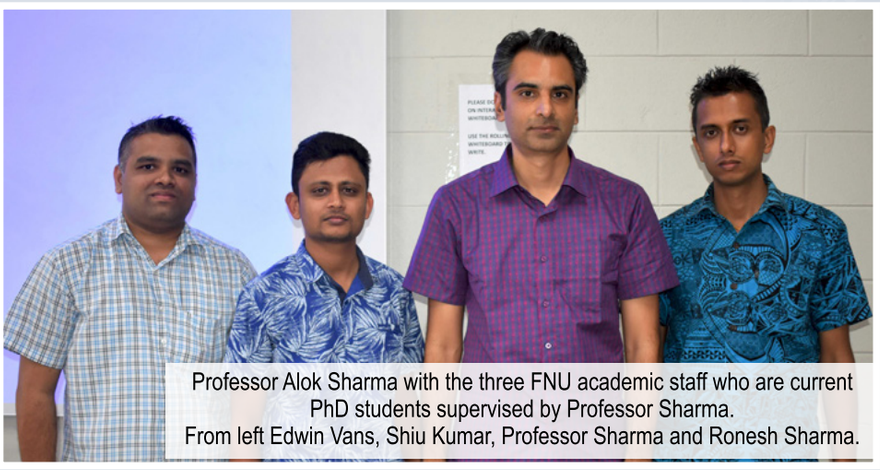
FIJI NATIONAL UNIVERSITY

FNU News

Professor Alok Sharma highlights the vital role of machine intelligence



Professor Alok Sharma with the three FNU academic staff who are current PhD students supervised by Professor Sharma.
From left Edwin Vans, Shiu Kumar, Professor Sharma and Ronesh Sharma.

Professor Alok Sharma, a senior research scientist at Japan's RIKEN Institute and Professor at the University of the South Pacific (USP), highlighted the importance of "Machine Intelligence: A way towards a better future" at his seminar presentation at the Fiji National University (FNU) recently.

Professor Sharma's research interests include artificial intelligence, computer security, human cancer classification and proteomics.

He has to date published over 100 scientific articles with a h-index of 28. He is internationally recognised for his research and publications, is a recipient of the Griffith Award for academic excellence in 2002, and the USP Vice-Chancellor's Prize for best research output in 2013.

Professor Sharma is also an Adjunct Professor at the Institute for Integrated and Intelligent Systems (IIIS), Griffith University, Australia and a visiting lecturer at Tokyo Medical and Dental University (TMDU) in Japan.

Speaking to those present at the public seminar, Professor Sharma presented his research on Machine Learning and how this field of study has become so important in today's world.

He said machine intelligence enables a machine to interact with an environment in an intelligent way. Professor Sharma explained that "Machine intelligence addresses many real-life problems from the automobile industry to crime investigation or forensic sciences. Artificial Intelligence (AI) technologies can be used to solve our daily lives and social issues."

"In Agriculture, AI (Artificial Intelligence) can be used in predicting plant health. Sensors will capture plant data, which will be applied to Machine Learning or AI models to predict the future of the plant health. This will definitely help maximise the yield of crops." "In finance and business, AI techniques could be used to predict the financial market, shares and the economy."

Other applications of AI and Machine Learning that Professor Sharma discussed included crime investigation by police agencies. He said that drones with AI capability can assist police investigations to combat illicit drugs by finding plants such as marijuana.

"Marijuana and other drugs in society is the basis of many crimes. Therefore, controlling such activities will have an immensely positive impact on our society," Professor Sharma said.

"The plantation can be detected by remote sensing via satellites through Machine Learning and AI, which will cover a larger area for scrutiny."

Professor Sharma added that capacity building was an essential aspect of research. He also suggested that research should not be confined to universities only and that collaboration with industry stakeholders was useful.

Professor Sharma added that there was a lot of scope for research on AI and Machine Learning, and FNU could initiate research either by forming research teams within the university or by collaborating with external institutes for collaborative projects for innovative AI-based outcomes.

Professor Sharma supervised three FNU staff PhD studies at USP. Two of these staff completed their studies this month, with one continuing.

Dr Ronesh Sharma from CEST completed his PhD thesis titled 'Protein Fold Recognition and Structure Class Prediction and Molecular Recognition Features (MoRF) Detection using Computational Intelligence Methodologies'. He completed this PhD with four conference papers, one book chapter, and eight Q1 journal publications arising from his PhD studies.

CEST fellow lecturer Dr Shiu Kumar also completed his research titled 'EEG Signal Classification and Its Application to Brain Computer Interface Systems using Computational Intelligence Techniques' with 10 publications.

Of the 10 publications, five were conference papers, two published in Q1 journals and three in Q2 journal papers.

CEST lecturer Edwin Vans is the third FNU staff being supervised by Professor Sharma as a second-year part-time PhD student. Vans' PhD thesis is titled 'Unsupervised Methods for Clustering & Analysis of Single-Cell RNA Sequencing Datasets' and he has one Q2 journal publication.

FNU Pro Vice-Chancellor Research Professor Mohini Singh, thanked Professor Sharma for his insightful and interesting research presentation.

Professor Alok Sharma.

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