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Departmental Seminar

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Seminar Title	: A Deep Learning Framework using Attention Mechanism for Human Activity Recognition.
Speaker	: Dr Samit Ari
Supervisor	: Prof Samit Ari.
Venue	: Seminar Room (EC 303),
Date and Time	: 29 Aug 2025 (12.00 Noon)
Abstract	: The paper introduces a hybrid deep learning model integrating Convolutional Neural Networks (CNNs) with attention blocks in order to improve the precision and robustness of Human Activity Recognition (HAR). The proposed method makes advantage of the features of both architectures: While attention blocks dynamically recalibrate channel-wise feature responses to underline valuable features and suppress less relevant ones, CNNs are used for effective extraction of spatial dependencies and local patterns from raw sensor data. This mix helps the model to manage noisy input data more efficiently and to learn more significant feature representations for activity classification. Using an end-to-end learning approach, the model jointly maximises spatial and channel-wise characteristics. Because it shows great generalisation across many activities and subjects, this integrated architecture is well-suited for a wide spectrum of real-world HAR applications, including fitness tracking, healthcare monitoring, and smart settings. In the WISDM data set, a commonly used benchmark in HAR research, the model obtains an outstanding overall accuracy of 99.61% indicating its efficacy and its possible implementation in pragmatic situations.