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Topic: **Multiclass and Multilabel Classification using CNN Models**

- **Duration: 3-4 Hrs (Theory and Practical, tentatively 1 Hr Colab exercise)**
- **Target audience: students, researchers – Introductory level**
- **Skills required: Python programming skills, Basic image processing**

Abstract:

This lecture and practical sessions aim to be an introductory session for students and researchers who have heard about deep learning, convolutional neural network, but do not have a chance to explore the area.

The lecture does not assume any prior knowledge in the area. The materials are suitable for science students in general. The practical session will be conducted using Python. Hence, it is expected that you can write code and are comfortable with some programming language.

Bio:

Dr. Somnuk Phon-Amnuaisuk is an Associate Professor at the School of Computing & Informatics, Universiti Teknologi Brunei (UTB). He is responsible for teaching the undergraduate and graduate courses. He also supervises undergraduate student projects and graduate research projects. He leads the Media Informatics Special Interest Group (MI6) and serve as the director of the centre for innovative engineering for UTB. He also serves as a reviewer and an editorial board member for international journals. He is also actively involved as a committee member in many local/international conferences.

Somnuk received his Ph.D. from Edinburgh University in Artificial Intelligence (2001), supervised by Prof. Alan Smaill and Prof. Geraint Wiggins. Somnuk also holds a Master's in Management Degree from Sasin Graduate School, Chulalongkorn University and a Bachelor in Engineering Degree from King Mongkut Institute of Technology, Ladkrabang, (KMITL, รุ่น ๑�ธ), Thailand.

Lectures
1. Deep learning
2. Image processing
3. Building CNN models using Tensorflow, Keras
   - Loss functions
   - Model training

Colab Exercise:
- Create classification models
- Experiment with datasets