Gait and balance patterns are two major measurements for the evaluation of the elderly’s physical conditions and are therefore often used in the early detection of certain diseases. For example, patients with Alzheimer’s disease (AD) were reported of revealing gait disorders and balance problems. In this talk we will present an inertial-sensor based wearable device, which are designed for objective quantitative measurement of gait patterns and balance capabilities. Accompanied with the device are the algorithms and CI models, which integrally provide the quantitative evaluations. We will also discuss several essential indicators from gait and balance patterns for AD diagnosis. The gait analyzing algorithm, which is composed of stride detection followed by gait cycle decomposition, and the balance analysis algorithm, which is measured by the sway speed in anterior-posterior (AP) and medial-lateral (ML) directions of the projection path of body’s center of mass (COM), will also be introduced.

Website: https://deeplearningandaiwinterschool.github.io/
## DLA5 Day 3

- Featuring IEEE-CIS Distinguished Lecturer talk by Prof. Pau-Choo Chung (Julia)

### Day 3: Sat 8 May 2021 (ICT time UTC+7)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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| 09:00 - 09:03 am. | IEEE-CIS Distinguished Lecturer Talk I  
Speaker: Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: Analysis of Inertial Sensor Signals for Health Care Applications |
| 10:00 - 11:00 am. | IEEE-NSF Distinguished Lecturer Talk  
Speaker: Chaiwut Jarettuk, Google Research, Germany  
Topic: Interpretable Composition of Deep Generative Models |
| 11:00 am. - 12:00 noon. | Lunch Break |
| 12:00 noon - 1:00 pm. | FIT Academic Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: The analysis of inertial sensor signals for health care applications |
| 01:00 - 02:00 pm. | FIT Industry Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: Interpretable Composition of Deep Generative Models |
| 02:00 - 03:00 pm. | FIT Academic Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: The analysis of inertial sensor signals for health care applications |
| 03:00 - 04:00 pm. | FIT Industry Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: Analysis of Inertial Sensor Signals for Health Care Applications |
| 04:00 - 05:00 pm. | FIT Academic Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: The analysis of inertial sensor signals for health care applications |
| 05:00 - 06:00 pm. | FIT Industry Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: The analysis of inertial sensor signals for health care applications |
| 06:00 - 07:00 pm. | FIT Academic Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: The analysis of inertial sensor signals for health care applications |
| 07:00 - 08:00 pm. | FIT Industry Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: The analysis of inertial sensor signals for health care applications |
| 08:00 - 09:00 pm. | FIT Academic Talk  
Speaker: Prof. Pau-Choo Chung (Julia), National Cheng Kung University, Taiwan  
Topic: The analysis of inertial sensor signals for health care applications |
| 09:00 - 10:00 am. | FIT Industry Talk  
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Topic: The analysis of inertial sensor signals for health care applications |
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