

Supplementary Material

A Deep Learning Model for 3D Ground Reaction Force Estimation using Shoes with Three Uniaxial Load Cells

This supplementary material includes contents which are not included in the main paper due to space limit.

A. Hyper-parameters

Table S1 presents the hyper-parameters used in Section 2.4 of the main paper.

Table S1. Hyper-parameters used in 3-axis GRF estimate seq2seq LSTM model.

Input data size	1 st Layer size			2 nd Layer size		
	Size	State Activation Function	Gat Activation Function	Size	State Activation Function	Gat Activation Function
200	200	Tanh	Sigmoid	50	Tanh	Sigmoid
3 rd Layer size			Dropout	Output layer		
Size	State Activation Function	Gat Activation Function		Size	Loss Function	
200	Tanh	Sigmoid	0.5	200	Mean Squared Error	
Learning Rate		Optimizer		Epochs		Mini Batch Size
0.01(constant)		Adam		1000		32

B. Computer spec

Table S2 is the computer specifications used to train the seq2seq LSTM model in section 2.4 of the main paper.

Table S2. Computer spec.

Operating system	System Manufacturer	System Model	BIOS
Window 10 Enterprise	Gigabyte Technology Co., Ltd	X570 GAMING X	F3
CPU	Memory	GPU	
AMD Ryzen 7 3700X 8-Core Processor	32,716MB RAM	Model	Total Memory
		NVIDIA GeForce RTX 2080	24,360 MB

C. Learning cost

Table S3 shows the time required to learn the seq2seq LSTM model in section 2.4 using the computer in Table S2. And Figure S1 is the learning cost

Table S3. Time required for training with 1000 epochs.

Learning Time	1 minute 37 seconds
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Figure S1. Learning cost.

