Vu Linh Le
AI Researcher / AI Engineer

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Profile

Experienced AI Engineer / Researcher with a proven track record of 4 years in designing, developing, and serving AI models. Seeking an opportunity to contribute technical expertise and innovation to a dynamic team.

Education

Sep 2014 — Aug 2019

Hanoi University of Science and Technology - Vietnam

Bachelor of Automation and control, GPA: 3.3/4.0

Sep 2019 — Fep 2022

KAIST - South Korea

Master's degree at school of Electrical Engineering, GPA: 3.8/4.0

Employment

Mar 2022 - Feb 2024

AI Researcher - ASLEEP Inc.

Key member of AI Research team, in charge of:

- Initiating and developing breathing sound-based neural network, including single task, and multi-tasked models.
- Writing journal papers with Medical Professors, published two journal papers of IF >7.0.
- Collaborating closely with back-end team to serve pyTorch models with ONNX Runtime, saved additionally 30% of inference cost.
- Developing AI side SDK that serves AI models on mobile devices.

Courses

- CS285: Deep reinforcement learning - UC Berkeley
- EE538: Neural networks - KAIST
- AI505: Optimization for AI - KAIST
- EE488: Database and Big data systems - KAIST

Skills

PyTorch: Proficient

MLFlow: Proficient

Onnx / OnnxRT: Proficient

English: Proficient

Korean: Conversational

Mobile app. dev.: Enthusiastic

Selected projects

Mar 2022 - Nov 2023

Sleep Apnea and Snoring Detection using ViT Models | Asleep

- Defined goals, managed data extraction, and designed ViT model architecture for Sleep Apnea and Snoring Detection.
- Achieved competitive results comparable to the current State-of-the-Art in the AHI estimation task, demonstrating a notable accuracy of 94%.

Multi-tasked model research and development | Asleep

- Overcame the challenge of training multiple tasks simultaneously through knowledge distillation on a multi-headed model for the Unified Multi-Task Model for three tasks of Sleep stage, Sleep Apnea, and Snoring detection. Resulted in saving 60% of inference cost.
- Achieved substantial improvement in model performance compared to the naive method of solely relying on supervised learning.

Nov 2023 - Now

AI side SDK development for mobile applications | Asleep

- Developed CPP libraries for integration into native mobile applications and created proof-of-concept applications.
- Implemented on-device AI model deployment using Onnx and Onnx Runtime, enhancing the accessibility of AI capabilities on mobile platforms.

Jun 2021

Application of GNN on Image classification task | NCL lab - KAIST

- Overcame the limitation of GNN in Image classification task with super-pixel and dynamic GNN, surpassed SOTA. The article was later cited by multiple journal papers in aerial image processing.

Key publications

1. Le, Vu Linh, et al. "**Real-Time Detection of Sleep Apnea Based on Breathing Sounds and Prediction Reinforcement Using Home Noises: Algorithm Development and Validation**." Journal of Medical Internet Research 25 (2023): e44818.
2. Han SC, Kim D, Rhee C, et al. **In-Home Smartphone-Based Prediction of Obstructive Sleep Apnea in Conjunction With Level 2 Home Polysomnography**. JAMA Otolaryngol Head Neck Surg. Published online November 16, 2023. doi:10.1001/jamaoto.2023.3490
3. Le, Vu Linh, et al. "**Evaluation of a sound-based deep learning model for home-based obstructive sleep apnea detection using Level 2 home PSG data**." Chest 164.4 (2023): A6291-A6292.
4. L. V. Linh, et al. **"Dynamic Graph Neural Network for Super-Pixel Image Classification,"** 2021 ICTC
5. K. Lee, L. V. Linh, H. Kim and C. -H. Youn, **"Neural Architecture Search for Computation Offloading of DNNs from Mobile Devices to the Edge Server,"** 2021 (ICTC) doi: 10.1109/ICTC52510.2021.9621012.