github.com/maudzung **Advance in *Python, C, C++***

Machine Learning Engineer

NGUYEN MAU DUNG

Birth date: 16 April 1993 (+82) 010-2639-1604

Nationality: Vietnamese nguyenmaudung93.kstn@gmail.com

Languages: Vietnamese *(Native)*, English *(Fluent)*, Korean *(Basic)*

Reside: Seoul, South Korea

Education

Master's ***Korea Institute of Science and Technology (KIST)*** ***Mar 2018 – Present***

- *Major:* Human-Computer Interaction & Robotics
- *CPA:* **4.25/4.50**
- *Thesis:* Image-based 3D Human Joint Angle Estimation for Daily Activities.

Bachelor ***HaNoi University of Science and Technology (HUST), VietNam*** ***Sep 2011 – Jun 2016***

- *Major:* Electronics and Telecommunications

  Honor Program for Talented Engineers
- *CPA:* **3.58/4.00** *Grade:* Very good *Rank:* 07/428 ***(top 2%)***

High School ***HaTinh High School for Gifted Students, VietNam*** ***Sep 2008 – Jun 2011***

- *Class:* Specializing in mathematics.

Experience

Mar 2018 – Present ***Artificial Intelligence Researcher*** ***KIST, Seoul, Korea***

- Estimated 3D human joint angles from multi-view images/videos. We built a new dataset that includes the images captured by 28 digital cameras and the ground truth of 3D human joint angles extracted from the Motion Capture System. The ultimate goal of the research is to improve the performance of athletes and speed up the rehabilitation process of patients;
- 2D & 3D Human pose estimation from images/videos;
- Classified three kinds of foot groups (normal, abnormal, and athlete) by using spectrograms transformed from raw IMU sensor data as the input of deep CNN networks. Seven IMU sensors were attached to the lower human body while 29 semi-professional athletes, 19 normal participants, and 21 participants with foot abnormalities walked on a 20-m straight path;
- Early detected senile disorders (Sarcopenia, cognition, depression, and frailty) by using spectrograms transformed from raw IMU sensor data and deep learning technology. Totally, 60 elderly people wearing seven IMU sensors were asked to walk on a straight corridor;
- Detected dangerous situations of elderly people in the bedroom based on 2D human body key points in images extracted by using the OpenPose algorithm;
- Classified 28 subcellular protein patterns in human cells.

Jul 2016 – Apr 2017 ***Embedded Software Engineer*** ***Humax digital, HaNoi, VietNam***

- Developed set-top-box products. I was in charge of the communication between the application layer and the driver layer.

Sep 2013 – Jun 2016 ***Research Assistant*** ***ESRC Lab/HUST, HaNoi, VietNam***

- Developed algorithms to fetch videos from servers via the HTTP protocol in order to improve users' experience while they are watching videos online in a condition of limited and fluctuating bandwidth;
- Monitored the Lab with 50 people in 6 research groups.

Technical skills

- Programming languages: Python *(Advance, frequently using)*, C, C++, Cuda, JavaScript *(Experience);*
- AI Frameworks: Pytorch *(Advance, frequently using)*, Tensorflow, Keras *(Experience);*
- Deep Learning Technology *(Advance);*
- Algorithms and Data Structures *(Advance);*
- Version Control System: Git *(Advance, frequently using);*
- Operating systems: Linux, Window, MacOS *(Advance, frequently using).*

Awards

- First place best paper award at 2020 IEEE International Conference on Consumer Electronics (Las Vegas, USA) (2020);
- Excellent student from the Dean of HaNoi University of Science and Technology, VietNam. (2013, 2014);
- Third prizes in Vietnam Physics Olympiad. (2010, 2011);
- First prize in Ha Tinh Province Mathematics contests. (2010).

Publications

[1] *"Multiple Classification of Gait Using Time-Frequency Representations and Deep Convolutional Neural* Networks*"*, in IEEE Transactions on Neural Systems and Rehabilitation Engineering, doi: 10.1109/TNSRE.2020.2977049;

[2] *"IMU-based Spectrogram Approach with Deep Convolutional Neural Networks for Gait Classification"*, 2020 ICCE, in Las Vegas, USA;

[3] *"Walking-in-Place Characteristics-Based Geriatric Health Assessment Using Deep Convolutional Neural Networks"*, 2020 EMBC, in Quebec, Canada;

[4] *"Deep Neural Network-based gait classification using wearable inertial sensor data"*, 2019 EMBC, in Berlin, Germany;

[5] *"An evaluation of segment duration effects in HTTP adaptive streaming over mobile networks"*, 2015 NICS, in Ho Chi Minh city, VietNam;

[6] *"Quality-delay tradeoff optimization in multi-bitrate adaptive streaming"*, 2015 ICCE, in Las Vegas, USA.

Patents

[1] "Smart *Walk Simulator for Elderly Healthcare"*, Patent Registration No. 2019-0145553, South Korea;

[2] *"Method and system for evaluating elderly health status using stepping characteristics"*, Patent Registration No. 2019-0128445, South Korea;

[3] *"3D human body joint angle prediction method and system through the image recognition"*, Patent Registration No. 2019-0060025, South Korea.

Scholarships

- University of Science and Technology scholarship (Korea) (2018-2020);
- Hanoi University of Science and Technology scholarship (VietNam) (2011-2015);
- Odon Vallet Scholarship (VietNam) (2015, 2010);
- Scholarship of FUYO Corporation and Sumitomo Corporation (Japan). (2015, 2012).

Interests

- AI for Health, Self-Driving Car, Human Pose Estimation, Action Recognition, Object Detection & Tracking, Face Recognition.