

HAI PHAN

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EDUCATION

Carnegie Mellon University (CMU), Pittsburgh, PA, USA PhD student, Electrical and Computer Engineering (ECE)	<i>January 2019 - Present</i>
Carnegie Mellon University (CMU), Pittsburgh, PA, USA Master of Science, Electrical and Computer Engineering (ECE)	<i>January 2019 - May 2020</i>
University of Science, Ho Chi Minh City, Vietnam Bachelor of Science, Advanced Program In Computer Science (GPA : 3.61 / 4.0) Thesis: Developing Smart Environment with VR and AR. (Mark: 4.0/4.0)	<i>Sept 2009 - 2015</i>

TECHNICAL STRENGTHS

Programming Languages	C++, Objective-C, Python, Matlab
Deep Learning frameworks	Caffe, Tensorflow, Pytorch, MXNet, CUDA programming

WORK EXPERIENCE

Cylab biometrics, Carnegie Mellon University <i>Research Associate</i>	<i>Jan, 2019 - Present</i>
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- **Efficient deep learning for mobile devices:** Researched and developed facial recognition on devices (iOS/Android /JetsonTX/Xavier) (CMU face detection and matching C++ SDK). Improved the speed of inference **8×** in GPU and achieved **8-10 fps** on iPhone 7, **125 fps** and **20 fps** on Xavier GPU and CPU respectively.
Languages/Technical usage: C++, Python, Pytorch, Caffe, MXNet, Objective-C, OpenCV

Cylab biometrics, Carnegie Mellon University <i>Research Associate</i>	<i>June, 2017 - June, 2018</i>
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- Developed and maintained CMU facial recognition C++ SDKs, delivering software libraries to some agencies.
- **3D Face Pose Estimation:** Researched and developed 3D facial landmarking for facial alignment algorithm. To wrap 3D face, a 3D Thin Plate Spline (TPS) Transformers are implemented by estimating parameters through deep neural networks. 3D facial data on 300W-LP, AFLW, and AFLW2000-3D are manually generated for 3D training. The proposed method outperformed previous methods when achieved Normalized Mean Error of **3%**.
Languages/Technical usage: C++, Python, Caffe, OpenCV, Open GL.

Axon AI, Taser/Axon International <i>Research Engineer</i>	<i>Jan, 2017</i>
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- **Machine Vision:** Developed real-time correlation filter object tracking C++ SDK, following movement of people/objects. Achieved the speed of **30 fps** on iPhone 5,6 with very high accuracy.
Languages/Technical usage: C++, Objective-C, OpenCV.

Fossil <i>Research Engineer</i>	<i>Jan, 2016 - Dec, 2016</i>
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- **Video-based biometric signal processing:** Developed non-intrusive heart rate estimation algorithm in C++ SDK using face/finger video recorded by an ordinary camera.
Languages/Technical usage: C++, Objective-C, OpenCV.

Misfit Wearables <i>Software Engineer</i>	<i>May, 2014 - 2016</i>
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- Developed iOS Misfit app for millions of users worldwide.
Languages/Technical usage: BLE, Objective-C.

· **Data sensor streaming** Developed a API to streaming data to record human activities. Calibration Data are obtained through many sensors such as gyroscope, Accelerometer, and Magnetometer. The streaming process can last each to **16** hours and data are pushed on server through a Web API. In addition, stream data is used to create 3D human body simulation in the sport for research.

Languages/Technical usage: C++, BLE, Objective-C, OpenCV, OpenGL.

PUBLICATIONS

H. Phan, Z. Liu, D. Huynh, Z. Shen, K. Cheng and M. Savvides, *Binarizing MobileNet via Evolution-based Searching*, CVPR 2020 (acceptance rate: 22%). [cvpr2020](#)

H. Phan, D. Huynh, Y. He, M. Savvides, and Z. Shen, *MoBiNet: A Mobile Binary Network for Image Classification*, in WACV 2020. [wacv20](#)

Zhiqiang Shen, Honghui Shi, Jiahui Yu, **Hai Phan**, Rogerio Feris, Liangliang Cao, Ding Liu, Xinchao Wang, Thomas Huang, Marios Savvides. Improving Object Detection from Scratch via Gated Feature Reuse 30th British Machine Vision Conference (BMVC), 2019. [bmvc2019](#)

An T. Duong, **Hai T. Phan**, Nam Do - Hoang Le, Son T. Tran. *Hierarchical Approach for Handwritten Digits Recognition Using Sparse Auto-encoders*. In Springer Conference of Advanced Soft Computing 2014. [springer](#)

Hai T. Phan, An T. Duong, Nam Do - Hoang Le, Thai Son Tran . *Hierarchical Sparse Auto-encoder Using Linear Regression-based Feature in Clustering for Handwritten Digit Recognition*. In 8th International Symposium on Image and Signal Processing and Analysis (ISPA) - 2013. (**Oral Presentation**) [ieee](#)