Nhat (Nick) Pham, M.Sc.

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Research Interests

Cyber-Physical Systems, Mobile Healthcare Systems, Embedded Operating Systems, Cognitive Radio Networks, and Wireless Sensor Networks.

Education

DPhil (Ph.D.) student in Computer Science,
University of Oxford, Oxford, United Kingdom
Advisors: Prof. Niki Trigoni, Prof. Andrew Markham, and Prof. Tam Vu
Duration: 2020 - present

Ph.D. student in Computer Science,
University of Colorado Boulder, Colorado, United States
Advisor: Prof. Tam Vu
Duration: 2018 - 2020

M.Sc. in Computer Science,
Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea
Advisor: Prof. Daeyoung Kim
Graduation year: 2018

B.E. in Computer Engineering
Vietnam National University-University of Technology (HCMUT), Ho Chi Minh city, Vietnam
Advisor: Dr. Anh Pham and M.E. Hieu Bui
Graduation year: 2015
Honor Program, Ranking: 2/233, GPA: 8.95/10

Awards & Recognitions

University of Oxford DPhil Scholarship	2020-2023
ACM Communication of the ACM Research Highlight	2021
ACM SIGMOBILE Research Highlight	2020
ACM GetMobile Research Highlight	2019
Best Paper Award, ACM MobiCom 2019	2019
KAIST Graduate Scholarship, KAIST, South Korea	2016-2018
HCMUT Silver graduation medal, HCMUT, Vietnam.	2015
HCMUT Excellence Scholarship, HCMUT, Vietnam.	2011-2015
Odon Vallet's Fellowship, Ho Chi Minh City, Vietnam.	2011
Odon Vallet's Fellowship, Thua Thien Hue, Vietnam.	2009-2010

Publications

■ *Journals and Magazines*

1. Detection of Microsleep Events with a Behind-the-ear Wearable System.
   IEEE TMC - IEEE Transactions on Mobile Computing (IF: 5.577, preprint).
   Nhat Pham, Tuan Dinh, Taeho Kim, Zohreh Raghebi, Nam Bui, Hoang Truong, Tuan Nguyen, Farnoush Banaei-Kashani, Ann Halbower, Thang Dinh, Phuc Nguyen, and Tam Vu.

2. eBP: Frequent and comfortable blood pressure monitoring from inside human's ears.
   ACM CACM - Communications of the ACM, Vol. 64, No. 8, Aug. 2021.
   Nam Bui, **Nhat Pham**, Jessica Barnitz, Phuc Nguyen, Hoang Truong, Taeho Kim, Anh Nguyen, Zhanan Zou, Nicholas Farrow, J. Xiao, Robin Deterding, Thang Dinh and Tam Vu.
   Research Highlight

3. eBP: Frequent and comfortable blood pressure monitoring from inside human's ears.
   Nam Bui, **Nhat Pham**, Hoang Truong, Phuc Nguyen, J. Xiao, Robin Deterding, and Tam Vu.
   ACM GetMobile - Mobile Computing and Communications, Vol. 23, Iss. 4, Dec. 2019.
   Research Highlight

4. Epileptic Seizure Detection and Experimental Treatment: A Review.
   Taeho Kim, Phuc Nguyen, **Nhat Pham**, Nam Bui, Hoang Truong, Sangtae Ha, Tam Vu
   Frontiers in Neurology, Jul. 2020.

5. MSHCS-MAC: A MAC for Multi-hop Cognitive Radio Networks Based on Slow Hopping and Cooperative Sensing Approach with Time Synchronization.
Won-Deuk Yoon, **Nhat Pham**, Ki-Woong Kwon, Jang-Gwan Im, Dae-Young Kim
KICS - The Journal of Korean Institute of Communications and Information Sciences, Vol. 43, No. 11, Nov. 2018

■ *Conferences*

6. DroneScale: Drone Load Estimation Via Remote Passive RF Sensing.
Phuc Nguyen, Vimal Kakaraparthi, Nam Bui, Nikshep Umamahesh, **Nhat Pham**, Hoang Truong, Yeswanth Guddeti, Dinesh Bharadia, Eric Frew, Richard Han, Daniel Massey, Tam Vu.
ACM SenSys'20 - The 18th ACM Intl' Conf. on Embedded Networked Sensor Systems.
(44 out of 213 submissions, acceptance ratio: 20.7%).

7. WAKE: A Behind-the-ear Wearable System for Microsleep Detection.
Nhat Pham, Tuan Dinh, Zohreh Raghebi, Taeho Kim, Nam Bui, Phuc Nguyen, Hoang Truong, Farnoush Banaei-Kashani, Ann Halbower, Thang Dinh, and Tam Vu.
ACM MobiSys'20 - The 18th ACM Intl' Conf. on Mobile Systems, Applications, and Services.
(34 out of 175 submissions, acceptance ratio: 19.4%).

8. Painometry: Wearable and Objective Quantification System for Acute Postoperative Pain.
H. Truong, N. Bui, Z. Raghebi, M. Ceko, **N. Pham**, P. Nguyen, A. Nguyen, T. Kim, K. Siegfried, E. Stene, T. Tvrdy, L. Weinman, T. Payne, D. Burke, T. Dinh, S. D'Mello, F. Banaei-Kashani, T. Wager, P. Goldstein, and T. Vu.
ACM MobiSys'20 - The 18th ACM Intl' Conf. on Mobile Systems, Applications, and Services.
(34 out of 175 submissions, acceptance ratio: 19.4%).

9. eBP: A Wearable System For Frequent and Comfortable Blood Pressure Monitoring.
Nam Bui, **Nhat Pham**, Jessica Barnitz, Phuc Nguyen, Hoang Truong, Taeho Kim, Anh Nguyen, Zhanan Zou, Nicholas Farrow, J. Xiao, Robin Deterding, Thang Dinh and Tam Vu.
ACM MobiCom'19 - The 25th ACM Intl' Conf. on Mobile Computing and Networking.
(30 out of 186 submissions, acceptance ratio: 16.1%).
Best Paper Award,
ACM GetMobile Research Highlight 2019,
ACM SIGMOBILE Research Highlight 2020,
ACM CACM Research Highlight 2021.

10. MSHCS-MAC: A MAC protocol for Multi-hop cognitive radio networks based on Slow Hopping and Cooperative Sensing approach.
Nhat Pham, Kiwoong Kwon, and Daeyoung Kim.
ISCC'18 - The 23th IEEE Symposium on Computers and Communications, Brazil, June 2018.

11. Oliot-OpenCity: Open Standard Interoperable Smart City Platform.
Yalew Tolcha, Minh Nguyen, Jawook Byun, Kiwoong Kwon, Jiyong Han, Wondeuk Yoon, Nakyung Lee, Hyunseob Kim, **Nhat Pham**, and Daeyoung Kim.
ISC2'18 - IEEE Intl' Smart Cities Conference, Kansas City, Missouri, USA, Sep. 2018

12. IsV2C: An Integrated Road Traffic-Network-Cloud Simulator for V2C Connected Car Services.
Heejae Kim, Jiyong Han, Seonghwan Kim, Jisoo Choi, Dongsik Yoon, Minsu Jeon, Eunjoo Yang, **Nhat Pham**, Sungpil Woo, Daeyoung Kim and Chan-Hyun Youn.
IEEE SCC'17 - The 14th IEEE Intl' Conf. on Services Computing, Hawaii, USA, Jun. 2017.

13. GS1 Global Smart Parking System: One Architecture to Unify Them All.
Nhat Pham, Muhammad Hassan, Hoang Minh Nguyen and Daeyoung Kim.
IEEE SCC'17 - The 14th IEEE Intl' Conf. on Services Computing, Hawaii, USA, Jun. 2017.

14. Towards an Open Framework for Home Automation Development.
Dang-Nhat Pham-Huu, Van-Hien Nguyen, Van-Anh Trinh, Van-Hieu Bui, and Hoang-Anh Pham.
ACOMP'15 - The 9th Intl' Conf. on Advanced Computing and Applications., Ho Chi Minh City, Vietnam, Nov. 2015.

■ *Workshops and Demos*

15. Demo: Earable - An Ear-Worn Biosignal Sensing Platform for Cognitive State Monitoring and Human-Computer Interaction.
Nhat Pham, Taeho Kim, Frederick M Thayer, Anh Nguyen, and Tam Vu.
ACM MobiSys'19 - The 17th ACM Intl' Conf. on Mobile Systems, Applications, and Services.

16. GS1 Global Smart Parking System: Integrated architecture that provides interoperability of global systems.
Nhat Pham, Sungpil Woo, Muhammad Hassan, Hoang Minh Nguyen and Daeyoung Kim.
KCC'17 - Korea Computer Congress, Jeju, Korea, Jul. 2017.

Patents

■ *International Patents*

1. Tam Vu, Robin Deterding, Ann Halbower, Farnoush Banaei-Kashani, **Nhat Pham**, and Nam Bui, "A Wearable System for Behind-the-Ear Sensing and Stimulation", PCT/US2020/031712.
2. Tam Vu, Robin Deterding, Nam Bui, and **Nhat Pham**, "Health Sticker: A Modular Adhesive Platform Monitoring Vital Signals", PCT/US2020/015961.

■ *Provisional Applications*

3. Tam Vu, Robin Deterding, Farnoush Banaei-Kashani, **Nhat Pham**, and Nam Bui, "A Wearable System for Intra-Ear Sensing and Stimulating", Provisional Application No.: 62/900,187.
4. Tam Vu, Robin Deterding, Nam Bui, and **Nhat Pham**, "eBP: A Wearable System For Frequent and Comfortable Blood Pressure Monitoring From Users Ear", Provisional Application No.: 62/900,182.
5. Tam Vu, Robin Deterding, Nam Bui, and **Nhat Pham**, "Breathing Gripper: A Miniature Breath Monitoring Device", Provisional Application No.: 62/968,369.

Experience

■ *Research Experience*

- **Graduate Research Assistant**, University of Colorado Boulder, USA. 2018-2020
- **Researcher**, Real-time and embedded systems lab, KAIST. 2018

■ *Teaching Experience*

- **Digital Systems**, University of Oxford, UK. Hilary & Trinity 2021
- **Concurrent Programming**, University of Oxford, UK. Hilary 2021
- **Linear Algebra**, University of Oxford, UK. Michaelmas 2020
- **Data and computer communication**, HCMUT, Vietnam. Fall 2015
- **Embedded systems**, HCMUT, Vietnam. Spring 2015

■ *Work Experience*

- **Embedded Software Engineer**, FPT Software, Ho Chi Minh City, Vietnam. 2015
- **Embedded Software Intern**, Applied Micro Circuits Corporation, Ho Chi Minh City, Vietnam. 2014
- **Kernel Maintainer**, RIOT-OS (The friendly Operating System for the Internet of Things). 2014-2015
- **Student participant**, 2014 Intel Cup Undergraduate Electronic Design Contest, Shanghai Jiao Tong University, Shanghai, China. 2014

Computer Skills

Programming languages, C/C++, Matlab, Python, Verilog, Java, Android, Bash, Makefile, Java Script, GNU linker script.
Hardware Platform, Software defined radios (USRP, bladeRF), Micro-controllers (ARM Cortex, MSP430, PIC, 8051, MIPS, Intel Atom), and FPGAs.
Operating systems, Linux, Android, Windows, TI-RTOS, freeRTOS, RIOT-OS, Contiki.
Software, Altium (PCB design), GNU Radio, openOCD, GDB, MATLAB.
Version Control, Git, Perforce.

Languages

English

- **TOEFL-iBT**, Total: 105/120. 2018
- **GRE**, Total: 314/340. 2017

Vietnamese, Mother tongue.

Reference

Prof. **Niki Trigoni**, Department of Computer Science, University of Oxford, UK.
Prof. **Andrew Markham**, Department of Computer Science, University of Oxford, UK.
Prof. **Tam Vu**, Department of Computer Science, University of Colorado Boulder, USA.
Prof. **Daeyoung Kim**, School of Computing, KAIST, South Korea.
Prof. **Phuc Nguyen**, Department of Computer Science and Engineering, UTA, USA.
Dr. **Anh Pham**, Faculty of Computer Science and Engineering, HCMUT, Vietnam.
M.E. **Hieu Bui**, Faculty of Computer Science and Engineering, HCMUT, Vietnam.