

CONTACT INFORMATION

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RESEARCH INTERESTS

Primary: Mobile Communication, mHealth, Mobile Privacy and Security, Wireless Sensing.
Secondary: Algorithms, Artificial Intelligence, Computer Architecture, Operating Systems.

EDUCATION

University of Colorado Boulder, CO, USA.
Ph.D., Computer Science and Engineering.

- Advisor: Prof. Tam Vu.
- Graduation year: 2018.

Sungkyunkwan University (SKKU), Seoul, South Korea.
M.S., Electrical and Computer Engineering.

- Advisor: Prof. Hyunsung Choo.
- Graduation year: 2014.

Vietnam National University, University of Science, Ho Chi Minh city, Vietnam.
B.S, Electronics and Telecommunications.

- Advisor: Dr. Bui Huu Phu.
- Graduation year: 2010.

AWARDS

- ACM SenSys 2018 Best Paper Runner-up Award (Oct. 2018)
- ACM SIGMOBILE Research Highlights 2017 (Oct. 2017)
- ACM SenSys 2017 Best Paper Nominee (Oct. 2017)
- 2nd prize ACM MobiCom App Contest 2017 (Oct. 2017)
- ACM S3 Best Paper Award 2017 (Oct. 2017)
- Best CS Dept. Senior Design Project Award 2017, CU Denver (May 2017).
- Best Paper Award from ACM MobiCom-S3 Workshop 2016, 2017 (Oct. 2016, 2017).
- Student Travel Grant Award from ACM SenSys 2016 (Sept. 2016).
- Student Travel Grant Award from ACM MobiSys 2016 (June 2016).
- Outstanding Graduate Student Award from Computer Science and Engineering Department, CU Denver, 2016 (May 2016).
- College-wide Best Overall Senior Design Project Award 2016, CU Denver (May 2016).
- Student Travel Grant Award from IEEE INFOCOM 2016 (Feb. 2016).
- Best Paper Presentation Award, KCC (Jun. 2013).
- Best Paper Award, KSII (Jun. 2012).
- 3rd prize of Mobile App Development Contest at Sungkyunkwan University (Nov. 2012).
- Academic Contest in University of Science, Vietnam: 2nd prize (2008), 1st prize (2009).

PROFESSIONAL EXPERIENCE

- Software Developer, Networking Lab, **Sungkyunkwan University** (2014).
- Software Engineer, Mobile Division, **Samsung Electronics** (2010 - 2012).

PUBLICATIONS

- *Mobile Systems, Mobile Security and Wireless Security.*
- “*TYTH*-Typing On Your Teeth: Tongue-Teeth Localization for Human-Computer Interface” **Phuc Nguyen**, Nam Bui, Anh Nguyen, Hoang Truong, Abhijit Suresh, Matthew Whitlock, Duy Pham, Thang Dinh, and Tam Vu
The ACM Intl’ Conf. on Mobile Systems, Applications and Services (**ACM MobiSys’18**)
(37 out of 138 submissions, acceptance ratio: 26.8%).

- “*CapBand*: Battery-free Capacitance Sensing Wristband for Hand Gesture Recognition”
Hoang Truong, Shuo Zhang, Ufuk Muncuk, **Phuc Nguyen**, Nam Bui, Anh Nguyen, Qin Lv, Kaushik Chowdhury, Thang Dinh, and Tam Vu
The ACM Intl’ Conf. on Embedded Networked Sensor Systems (**ACM Sensys’18**)
(23 out of 147 submissions, acceptance ratio: 15.6%)
ACM Sensys 2018 Best Paper Runner-up Award.
- “Body-Guided Comm.: A Low-power, Highly-Confined Primitive to Track and Secure Touch”
Viet Nguyen, Mohamed Ibrahim, Hoang Truong, **Phuc Nguyen**, Richard Howard, Marco Gruteser and Tam Vu
The ACM Intl’ Conf. on Mobile Computing and Networking (**ACM MobiCom’18**)
(47 out of 187 submissions, acceptance ratio: 22.5%).
- “Cost-Effective and Passive RF-Based Drone Presence Detection and Characterization”
Phuc Nguyen, Hoang Truong, Mahesh R., Anh Nguyen, Richard Han, and Tam Vu
ACM GetMobile 2018.
- “Volumetric Reconstruction of Thermal-depth 3D Models for Occluded Posture Estimation”
Shane Transue, **Phuc Nguyen**, Tam Vu, Min-Hyung Choi
Smart Health Journal 2018.
- “Matthan: Drone Presence Detection by Identifying Physical Signatures in the Drone’s RF Com.”
Phuc Nguyen, Hoang Truong, Mahesh R., Anh Nguyen, Richard Han, Tam Vu
The ACM Intl’ Conf. on Mobile Systems, Applications and Services (**ACM MobiSys’17**)
(34 out of 188 submissions, acceptance ratio: 18%).
ACM SIGMOBILE Research Highlight Award.
- “ParkSense: Automatic Parking Positioning by Leveraging In-Vehicle Magnetic Field Variation”
Phuc Nguyen, Hieu Nguyen, Dong Nguyen, Thang N. Dinh, Hung M. La, and Tam Vu
The IEEE Access Journal (**IEEE Access’17**).
- “Thermal-Depth Fusion for Occluded Body Skeletal Posture Estimation”
Shane Transue, **Phuc Nguyen**, Tam Vu, Min-Hyung Choi
The Intl’ Conf. on Connected Health: App., Sys. and Eng. (**ACM/IEEE CHASE’17**).
- “PhO2: Optical 3D printed & light extraction techniques for blood oxygen measurement”
Nam Bui, Anh Nguyen, **Phuc Nguyen**, Hoang Truong, Ashwin Ashok, Thang Dinh, Tam Vu
The ACM Intl’ Conf. on Embedded Networked Sensor Systems (**ACM Sensys’17**)
(26 out of 151 submissions, acceptance ratio: 17.2%)
ACM Sensys 2017 Best Paper Nominee,
Second prize at ACM MobiCom App contest 2017,
ACM S3 2017 Best Paper Award.
- “Battery-Free Identification Token for Touch Sensing Devices”
Phuc Nguyen, Ufuk Muncuk, Ashwin Ashok, Kaushik Chowdhury, Marco Gruteser, Tam Vu
The ACM Intl’ Conf. on Embedded Networked Sensor Systems (**ACM SenSys’16**)
(21 out of 119 submissions, acceptance ratio: 17.6%)
Department-wide Best Senior Design Project Award at CU Denver 2017.
- “Continuous and Fine grained Breathing Volume Monitoring from Afar Using Wireless Signals”
Phuc Nguyen, Xinyu Zhang, Ann C. Halbower and Tam Vu
The IEEE International Conference on Computer Communications (**IEEE INFOCOM’16**)
(300 out of 1644 submissions, acceptance ratio: 18.2%).
ACM S3 2016 Best Paper Award
- “Real-time Tidal Volume Estimation using Iso-surface Reconstruction”
Shane Transue, **Phuc Nguyen**, Tam Vu and Min-Hyung Choi
The Intl’ Conf. on Connected Health: App., Sys. and Eng. Technologies (**IEEE CHASE’16**)

- “Respiratory Volume Monitoring from Afar Using Wireless Signals”
Phuc Nguyen, Shane Transue, Ann C. Halbower, Min-Hyung Choi, and Tam Vu
The American Thoracic Society Intl’ Conf. (**ATS’17**).
 - “Capacitive sensing 3D-printed Wristband for Enriched Hand Gesture Recognition”
Hoang Truong, **Phuc Nguyen**, Anh Nguyen, Nam Bui and Tam Vu
The Workshop on Wearable Systems (**ACM MobiSys-WearSys’17**)
College-wide Best Senior Design Project Award at CU Denver, 2016.
 - “Photometry based Blood Oxygen Estimation through Smartphone Cameras”
Nam Bui, Anh Nguyen, **Phuc Nguyen**, Hoang Truong, Ashwin Ashok, Thang Dinh, Tam Vu
The ACM International Conference on Mobile Comp. & Networking - S3 (**ACM S3’17**).
Best Paper Award.
 - “Through-body Capacitive Touch Communication”
Hoang Truong, **Phuc Nguyen**, Viet Nguyen, M. Ibrahim, R. Howard, Marco Gruteser, Tam Vu
The ACM Intl’ Conf. on Mobile Computing & Networking - S3 Workshop (**ACM S3’17**).
 - “WikiSpiro: Non-contact Respiration Volume Monitoring during Sleep”
Phuc Nguyen, Shane Transue, Ann C. Halbower, Min-Hyung Choi, Tam Vu
The ACM International Conference on Mobile Comp. & Networking - S3 (**ACM S3’16**).
Best Paper Award.
 - “Investigating Cost-effective RF-based Detection of Drones”
Phuc Nguyen, Mahesh R., Anh Nguyen, Richard Han, Tam Vu
Workshop on Micro Aerial Vehicle Networks, Systems, & App. (**ACM MobiSys-DroNet’16**).
 - “Continuous and Fine-grained Respiration Volume Monitoring Using Continuous Wave Radar”
Phuc Nguyen, Xinyu Zhang, Ann C. Halbower, Tam Vu
The ACM Intl’ Conf. on Mobile Computing and Networking (**ACM MobiCom Poster’15**).
 - “Mobile Device Identification by Leveraging Built-in Capacitive Signature”
Manh Huynh, **Phuc Nguyen**, Marco Gruteser, and Tam Vu
The ACM Intl’ Conf. on Computer and Communications Security (**ACM CCS Poster’15**).
- *Wireless Sensor Networking.*
- “Delay-Efficient Data Collection with Dynamic Traffic Patterns in Wireless Sensor Networks”
Phuc Nguyen, Vyacheslav Zalyubovskiy, and Hyunseung Choo
The International Conference on Wireless Networks (**ICWN’13**).
 - “A Network Structure for Load-Balanced Clustering Data Aggregation in Duty-Cycled WSNs”
Phuc Nguyen, Sanggil Yeoum, Vyacheslav Zalyubovskiy, and Hyunseung Choo
The Korean Society for Internet Information (**KSII’13**).
 - “Minimum Latency and Energy-Efficient Data Collection with Dynamic Traffic in WSNs”
Phuc Nguyen, Le Duc Thang, and Hyunseung Choo
The Korea Computer Congress (**KCC’13**)
Best Paper Presentation Award.
 - “Maintaining Barrier Coverage using Mobile Sensors in WSNs”
Phuc Nguyen, Khanh Ha Nguyen Phan, Minhan Shon, and Hyunseung Choo
The Korean Society for Internet Information (**KSII’12**)
 - “A Latency-aware Data Aggregation Scheduling in Duty-cycled Wireless Sensor Networks”
Khanh Ha Nguyen Phan, **Phuc Nguyen**, Minhan Shon, and Hyunseung Choo
The Korean Society for Internet Information (**KSII’12**)
Best Paper Award.

TEACHING
EXPERIENCE

- Department of Computer Science and Engineering, University of Colorado, USA.
 - Fall 2018: Design and Analysis of Operating Systems (CSCI 3753). Enrolled as a TA.
 - Spring 2018: IoT and Wireless System (CSCI 4830-19/CSCI 7000-18). Enrolled as a TA.
 - Spring 2017: Embedded System Programming (CSCI 4287). Enrolled as a TA.
 - Fall 2016: Hardware and Software Interfaces (CSCI-3511). Enrolled as an instructor.
 - Fall 2016: Mobile Computing and Programming (CSCI 5211). Enrolled as a TA.
 - Spring 2016: Fundamentals of Computing Lab (CSCI-1411). Enrolled as an instructor.
 - Spring 2016: Embedded System Programming (CSCI 4287). Enrolled as a TA.
 - Fall 2015: Fundamentals of Computing Lab (CSCI-1411). Enrolled as an instructor.
 - Spring 2015: Fundamentals of Computing Lab (CSCI-1411). Enrolled as an instructor.
 - Spring 2015: Embedded System Programming (CSCI 4287). Enrolled as a TA.
 - Fall 2014: Fundamentals of Computing Labs (CSCI-1411). Enrolled as an instructor.
- Department of Computer Science, Sungkyunkwan University, South Korea.
 - Fall 2013: Distributed System Topics. Enrolled as a TA.
 - Summer 2013: Advanced System Engineering. Enrolled as a TA.

PROFESSIONAL
SERVICES AND
ACTIVITIES

- Chair - Workshop and Organization
 - ACM MobiCom S3 2017 (<http://mns-lab.org/s3/>)
- Technical Program Committee
 - ACM MobiSys PhD Forum 2018 (<https://tinyurl.com/y7re44tc>)
 - ACM MobiCom S3 2017 (<http://mns-lab.org/s3/>)
 - ACM SenSys - FAILSAFE 2017(<http://wp.doc.ic.ac.uk/failsafe/>)
 - IEEE VTC 2017(<http://www.ieeevtc.org/vtc2017spring/>)
- Reviewer Activities
 - IEEE Transactions on Mobile Computing
 - ACM MobiSys and ACM SenSys (2015 - 2018) - Student Reviewer
 - ACM MobiCom (2015 - 2017) - Student Reviewer
 - ACM/IEEE IPSN (2015 - 2018) - Student Reviewer
 - ACM UbiComp (2016 - 2017) - Student Reviewer
 - ACM/IEEE CHASE (2016 - 2017) - Student Reviewer
 - IEEE INFOCOM (2016) - Student Reviewer
 - IEEE PerCom (2016) - Student Reviewer
 - IEEE PMC (2017) - Student Reviewer
 - IEEE DCROSS (2017-2018) - Student Reviewer

SCHOLARLY TALKS
& PRESENTATIONS

- *Mobile Device Identification by Leveraging Built-in Capacitive Signature*, ACM CCS, Denver, May 2015.
- *Continuous and Fine-grained Breathing Volume Monitoring from Afar Using Wireless Signals*, IEEE INFOCOM, San Francisco, California, July 2016
- *Investigating Cost-effective RF-based Detection of Drones*, ACM MobiSys - DroNet, Singapore, July 2016
- *In-ear Biosignal Recording System: A Wearable For Automatic Whole-night Sleep Staging*, ACM MobiSys WearSys, Singapore, July 2016.
- *WikiSpiro: Non-contact Respiration Volume Monitoring during Sleep*, ACM MobiCom S3, New York, October 2016
- *Battery-Free Identification Token for Touch Sensing Devices*, ACM SenSys, Stanford University, California, November 2016
- *Capacitive sensing 3D-printed Wristband for Enriched Hand Gesture Recognition*, ACM MobiSys WearSys, New York, July 2017.
- *Matthan: Drone Presence Detection by Identifying Physical Signatures in the Drone's RF Communication*, ACM MobiSys, New York, July 2017.

STUDENT
MENTORING*PhD Junior Student*

- Taeho Kim, Fall 2018 - present.
- Hoang Truong, Spring 2017.

Undergraduate Student

- Duy Pham, Summer 2017, Spring 2018
- Ed Salisbury, UCD CS Engineering Senior Design Competition Winner 2017
- Lily Dam, UCD CS Engineering Senior Design Competition Winner 2017
- Bradley Dufresne, UCD CS Engineering Senior Design Competition Winner 2017

BROADER IMPACT

Mobile Healthcare Applications Development (iOS, Android) Developing mobile healthcare applications that have been using at CU Denver - Medical campus as follows:

- **mHealth Registry**: Mobile Healthcare App (Software Architect)
- **SCAD**: Mobile Healthcare App (Software Architect)
- **UTI-Decide**: Mobile Healthcare App (Software Architect)
URL: <https://goo.gl/s7qcEE>.
- **Heart-Failure Monitoring**: Mobile Healthcare App (Software Architect)
URL: <https://goo.gl/E7D9wf>.
- **Bright by Three (BB3)**: Mobile Childcare App (Software Architect)
URL: <https://goo.gl/sfuVuz>
- **Mother's Milk Messaging**: Mobile Childcare App (Software Architect)
URL: <https://goo.gl/qeyimT>
- **Filament**: Mobile Healthcare App (Software Architect).