Taeho Kim

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RESEARCH INTERESTS	Deep Learning, Mobile Computing, Mobile Healthcare

EDUCATION

University of Colorado Boulder, Boulder, CO, USA — Aug 2018 – Present
- PhD Candidate at the Department of Computer Science

University of Colorado Boulder, Boulder, CO, USA — Aug 2018 – May 2022
- Master of Science in Computer Science

Korea University, Seoul, Korea — Mar 2011 – Feb 2018
- Bachelor of Science in Computer Science and Engineering
- Bachelor of Engineering in Software Technology and Enterprise Program

WORK EXPERIENCE

Amazon Web Services, Inc., Santa Clara, CA, USA — May 2023 – Aug 2023
Applied Scientist Intern
- Distributed training and inference of large-scale deep learning models

Amazon Web Services, Inc., Santa Clara, CA, USA — May 2022 – Aug 2022
Applied Scientist Intern
- Machine learning compiler tuning optimization

Exicon Corp., Seongnam, Korea — Jan 2016 – Feb 2016
Research and Development Intern
- Researched technologies of products in semi-conductor testing machine
- Analyzed Fast Fourier Transform (FFT) algorithm and applied it for digitizers

RESEARCH EXPERIENCE

Internet Systems Laboratory, CU Boulder, CO, USA — Jan 2020 – Present
Research Assistant (Advisor: Professor Sangtae Ha)

Mobile and Networked Systems Laboratory, CU Boulder, CO, USA — Jul 2018 – Dec 2019
Research Assistant (Advisor: Professor Tam N. Vu)

Wireless Data Communications Laboratory, Korea University, Seoul, Korea — Mar 2016 – Jun 2018
Research Intern (Advisor: Professor Hyogon Kim)

PUBLICATIONS

CONFERENCES

[1] <u>Taeho Kim</u>, Yanming Wang, Vatshank Chaturvedi, Lokesh Gupta, Seyeon Kim, Yongin Kwon and Sangtae Ha, "LLMem: Estimating GPU Memory Usage for Fine-Tuning Pre-Trained LLMs," in *The 33rd International Joint Conference on Artificial Intelligence*, Aug 2024. [pdf]

[2] <u>Taeho Kim</u>, Yongin Kwon, Jemin Lee, Taeho Kim and Sangtae Ha, "CPrune: Compiler-Informed Model Pruning for Efficient Target-Aware DNN Execution," in *The 17th European Conference on Computer Vision*, Tel Aviv, Israel, Oct 2022. [pdf]

[3] Nhat Pham, Tuan Dinh, Zohreh Raghebi, <u>Taeho Kim</u>, Nam Bui, Phuc Nguyen, Hoang Truong, Farnoush Banaei-Kashani, Ann Halbower, Thang N. Dinh and Tam Vu, "WAKE: A Behind-the-ear Wearable System for Microsleep Detection," in *The 18th ACM International Conference on Mobile Systems, Applications, and Services*, Toronto, Canada, Jun 2020. [pdf]

[4] Hoang Truong, Nam Bui, Zohreh Raghebi, Marta Ceko, Nhat Pham, Phuc Nguyen, Anh Nguyen, <u>Taeho Kim</u>, Katrina Siegfried, Evan Stene, Taylor Tvrdy, Logan Weinman, Thomas Payne, Devin Burke, Thang Dinh, Sidney D'Mello, Farnoush Banaei-Kashani, Tor Wager, Pavel Goldstein and Tam Vu, "Painometry: Wearable and Objective Quantification System for Acute Postoperative Pain," in *The 18th ACM International Conference on Mobile Systems, Applications, and Services*, Toronto, Canada, Jun 2020. [pdf]

[5] Nam Bui, Nhat Pham, Jessica Jacqueline Barnitz, Zhanan Zou, Phuc Nguyen, Hoang Truong, <u>Taeho Kim</u>, Nicholas Farrow, Anh Nguyen, Jianliang Xiao, Robin Deterding, Thang Dinh and Tam Vu, "eBP: A Wearable System For Frequent and Comfortable Blood Pressure Monitoring From User's Ear," in *The 25th Annual International Conference on Mobile Computing and Networking*, Los Cabos, Mexico, Oct 2019. [pdf]

[6] P. Nguyen, <u>T. Kim</u>, J. Miao, D. Hesselius, E. Kenneally, D. Massey, E. Frew, R. Han, and T. Vu, "Towards RF-based Localization of a Drone and Its Controller," in *The 5th ACM Workshop on Micro Aerial Vehicle Networks, Systems, and Applications*, Seoul, Korea, Jun 2019. [pdf]

[7] N. Pham, <u>T. Kim</u>, F. M. Thayer, A. Nguyen, and T. Vu, "Demo: Earable - An Ear-Worn Biosignal Sensing Platform for Cognitive State Monitoring and Human-Computer Interaction," in *The 17th ACM International Conference on Mobile Systems, Applications, and Services (Demo)*, Seoul, Korea, Jun 2019. [pdf] [demo]

[8] <u>T. Kim</u>, W. Han, H. Kim, and Y. Park, "Vulnerable Road User Protection through Intuitive Visual Cue on Smartphones," in *Proceedings of the 2nd ACM International Workshop on Connected and Automated Vehicle Mobility, A Workshop of MobiCom 2017*, Snowbird, Utah, USA, Oct 2017. [pdf] [slides] [demo1] [demo2]

[9] <u>T. Kim</u> and H. Kim, "Vehicle-to-Vehicle Message Content Plausibility Check through Low-Power Beaconing," in *Proceedings of IEEE 86th Vehicular Technology Conference: VTC2017-Fall*, Toronto, Canada, Sep 2017. [pdf] [slides] [video]

[10] <u>T. Kim</u>, W. Han, and Y. Park, "Visual Cue-Based VRU Protection on Smartphones," in *Proceedings of the 15th ACM International Conference on Mobile Systems, Applications, and Services (poster)*, Niagara Falls, NY, USA, Jun 2017. [pdf] [poster]

JOURNALS

[1] Nam Bui, Nhat Pham, Jessica Jacqueline Barnitz, Zhanan Zou, Phuc Nguyen, Hoang Truong, <u>Taeho Kim</u>, Nicholas Farrow, Anh Nguyen, Jianliang Xiao, Robin Deterding, Thang Dinh and Tam Vu, "eBP: an ear-worn device for frequent and comfortable blood pressure monitoring," in *Communications of the ACM*, Jul 2021. [pdf]

[2] Nhat Pham, Tuan Dinh, <u>Taeho Kim</u>, Zohreh Raghebi, Nam Bui, Hoang Truong, Tuan Nguyen, Farnoush Banaei-Kashani, Ann Halbower, Thang N. Dinh, Vp Nguyen and Tam Vu, "Detection of Microsleep Events with a Behind-the-ear Wearable System," in *IEEE Transactions on Mobile Computing*, Jun 2021. [pdf]

[3] <u>Taeho Kim</u>, Phuc Nguyen, Nhat Pham, Nam Bui, Hoang Truong, Sangtae Ha and Tam Vu, "Epileptic Seizure Detection and Experimental Treatment: A Review," in *Frontiers in Neurology - Epilepsy*, Jul 2020. [pdf]

[4] Hyogon Kim and <u>Taeho Kim</u>, "Vehicle-to-vehicle (V2V) Message Content Plausibility Check for Platoons through Low-Power Beaconing," in *Sensors 2019, 19(24)*, Dec 2019. [pdf]

TEACHING EXPERIENCE
- F20 & S21 & F22 & S23 & F23 & S24: TA for Computer Systems (CSCI 2400)
- F19 & S20: TA for Computer Science 1: Starting Computing-Engineering Application (CSCI 1320)

PATENTS
- "System and method for detecting fake information about vehicle location" [KR][US][DE][CN]
- "Method and apparatus for verifying vehicle in inter-vehicular communication environment" [KR][US][CN][DE]

AWARDS & SCHOLARSHIPS
- National Science and Engineering Scholarship, Korea Student Aid Foundation   2015 – 2016
  - For attaining a semester GPA of at least 3.50/4.50. Full-tuition scholarship (3rd and 4th grade)
- Software Technology and Enterprise Program Scholarship, Korea University   2015 – 2016
  - Additional scholarship to support for Software projects and Start-up related educations (3rd and 4th grade)
- Excellent Assistant Award for a Student with Disabilities, Korea University   Mar 2016
  Support Center for Students with Disabilities
  - An assistant who supported the learning of a disabled student for more than a year with high praise
- Academic scholarships, Korea University
  - Best Honors Scholarships (a second semester, 2nd grade)   Aug 2014
  - Honors Scholarships (a second semester, 1st grade and a first semester, 2nd grade)   Aug 2011, Feb 2014

| EXTRA CURRICULAR ACTIVITIES | **Korea University Support Center for Students with Disabilities**, Seoul, Korea | Mar 2015 – Jun 2016 |

Korea University Support Center for Students with Disabilities, Seoul, Korea   Mar 2015 – Jun 2016
Educational Assistant
- Helped a student with disabilities to keep up with his classes

Korea University Facilitation Society, Seoul, Korea   Jul 2015 – Mar 2016
Contents Team Leader
- Made program contents for meeting processes and public relations
- Conducted conferences and educational services at the request of external agencies
- Participated in study groups for facilitation techniques and meeting management skills

Korea University Institute of Computer Security, Seoul, Korea   Mar 2011 – Feb 2012
Member
- Conducted a project to convert various codes to plain texts in a club competition
- Participated in study groups for programming languages and reverse engineering

JoongAng Ilbo Educational Mentoring Program, Seoul, Korea   Sep 2011 – Jan 2012
Educational Volunteer
- gave a student who was interested in computer science a lot of advice and information for the department

Seoul Metropolitan Educational Service Program, Seoul, Korea   Jun 2011 – Dec 2011
Educational Volunteer
- taught math and English after school to students who did not have enough family support

MILITARY SERVICE

Republic of Korea Army, The 1st Infantry Division, Korea   Apr 2012 – Jan 2014
Sergeant

LANGUAGES
- Korean: Native language
- English: Fluent

SKILLS
- Experienced in DNN model compression and compilation
- Proficient in C, C++, Python, Java, MATLAB, LaTeX
- Intermediate level in HTML, CSS, PHP, JavaScript
- Others: C#, Ocaml

REFERENCES

Prof. Sangtae Ha
Associate Professor
Director, Internet Systems Laboratory
Department of Computer Science   sangtae.ha@colorado.edu
University of Colorado Boulder   http://netstech.org/sangtaeha/

Prof. Tam Vu
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[*CV updated on 2024-04-30*]