Chunjong Park

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Research Interests

Mobile Health, AI/ML for Health, Ubiquitous Computing, Human-Computer Interaction

Education

University of Washington — Sep. 2017 ~
Ph.D., Computer Science & Engineering, *(Advisor: Shwetak Patel)*

Korea Advanced Institute of Science and Technology (KAIST) — Feb. 2017
M.S., Computer Science, *(Advisor: Sung-Ju Lee)*

Korea Advanced Institute of Science and Technology (KAIST) — Feb. 2015
B.S., Computer Science, *(Advisor: Sue Moon)*

Research Experiences

Ubicomp Lab., University of Washington — Seattle, WA
Research Assistant — Sep. 2017 ~
Designing and building mobile health application that can be used easily and safely by ordinary people.

- Smartphone sensor-based user-facing health applications for rapid diagnostic test interpretation, capillary refill time measurement, and corneal disease screening.
- Improving trustworthiness and reliability of deep learning models for consumer-facing health applications
- Analyze user behaviors from large scale data collected from consumer-facing health devices and applications.

Microsoft Research — Redmond, WA
Research Intern — Jun. 2021 ~ Sept. 2021
(Manager: Tiffany Kuo, Mentors: Daniel McDuff, Miah Wander, Becky Mieloszyk)
Built blood pressure estimation neural networks using photoplethysmography (PPG) signal from smartphone.

Microsoft Research — Redmond, WA
Research Intern — Jun. 2020 ~ Sept. 2020
(Manager: Ken Hinckley, Mentors: Michel Pahud, Eyal Ofek, Teddy Seyed)
Built sensor-mediated interaction techniques for seamless content sharing in multi-device, multi-user environment, using proxemics and micro-mobility.

Snap Inc. — Seattle, WA
Research Intern — Jun. 2019 ~ Dec. 2019
(Manager: Andrés Monroy-Hernández)
Built a non-textual communication application on smartphone and wearable by seamlessly recommending appropriate avatars that represent user's current context. Prototypes released in App Store (Significant Otter, BFF)

Nokia Bell Labs — Cambridge, UK
Research Intern — Jun. 2018 ~ Sept. 2018
(Manager: Fahim Kawsar, Mentors: Alberto Gil Ramos, Sourav Bhattacharya)
Built strongly labeled audio dataset and a deep learning model on IoT devices for understanding ambient contexts.

Networking & Mobile Systems Lab., KAIST — Daejeon, Korea
Research Assistant — Mar. 2015 ~ Jul. 2017
Worked on exploring context-aware smartphone notification management, understanding thermal characteristics of smartphones, and exploring better use of micro spare time.

PUBLICATIONS

Reliable and Trustworthy Machine Learning for Health Using Dataset Shift Detection *(To appear)*
Chunjong Park, Anas Awadalla, Tadayoshi Kohno, Shwetak Patel
Conference on Neural Information Processing Systems (NeurIPS), Dec. 2021

Air Constellations: In-Air Device Formations for Cross-Device Interaction via Multiple Spatially-Aware Armatures
Nicolai Marquardt, Nathalie Henry Riche, Christian Holz, Hugo Romat, Michel Pahud, Frederik Brudy, David Ledo, **Chunjong Park**, Molly Jane Nicholas, Teddy Seyed, Eyal Ofek, Bongshin Lee, William A. S. Buxton, and Ken Hinckley
ACM Symposium on User Interface Software and Technology (UIST), Oct. 2021

Significant Otter: Understanding the Role of Biosignals in Communication
Fannie Liu, **Chunjong Park**, Yu Jiang Tham, Tsung-Yu Tsai, Laura Dabbish, Geoff Kaufman, Andrés Monroy-Hernández
ACM Conference on Human Factors in Computing Systems (CHI), May. 2021

RDTCheck: A Smartphone App for Monitoring Rapid Diagnostic Test Administration
Devesh Sarda, **Chunjong Park**, Hung Ngo, Alex Mariakakis, Shwetak Patel
ACM Conference on Human Factors in Computing Systems (CHI) Late-Breaking Work, May. 2021

Online Mobile App Usage as an Indicator of Sleep Behavior and Job Performance
Chunjong Park, Morelle Arian, Xin Liu, Leon Sasson, Jeffrey Kahn, Shwetak Patel, Alex Mariakakis, Tim Althoff
The Web Conference (WWW), Apr. 2021

The Design and Evaluation of a Mobile System for Rapid Diagnostic Test Interpretation
Chunjong Park, Hung Ngo, Libby Rose Lavitt, Vincent Karuri, Shiven Bhatt, Peter Lubell-Doughtie, Anuraj H. Shankar, Leonard Ndwiga, Victor Osoti, Juliana K. Wambua, Philip Bejon, Lynette Isabella Ochola-Oyier, Monique Chilver, Nigel Stocks, Victoria Lyon, Barry R. Lutz, Matthew Thompson, Alex Mariakakis, Shwetak Patel
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Mar. 2021

Diagnostic accuracy of an app-guided, self-administered test for influenza among individuals presenting to general practice with influenza-like illness: study protocol
Victoria Lyon, Monica Zigman Suchsland, Monique Chilver, Nigel Stocks, Barry Lutz, Philip Su, Shawna Cooper, **Chunjong Park**, Libby Rose Lavitt, Alex Mariakakis, Shwetak Patel, Chelsey Graham, Mark Rieder, Cynthia LeRouge, Matthew Thompson
BMJ Open, Nov. 2020

Augmenting Conversational Agents with Ambient Acoustic Contexts
Chunjong Park, Chulhong Min, Sourav Bhattacharya, Fahim Kawsar
ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI), Oct. 2020

Supporting Smartphone-Based Image Capture of Rapid Diagnostic Tests in Low-Resource Settings
Chunjong Park, Alex Mariakakis, Jane Yang, Diego Lassala, Yasamba Djiguiba, Youssouf Keita, Hawa Diarra, Beatrice Wasunna, Fatou Fall, Marème Soda Gaye, Bara Ndiaye, Shwetak Patel, Ari Johnson, Isaac Holeman
International Conference on Information and Communication Technologies and Development (ICTD), Jun. 2020

Fire in Your Hands: Understanding Thermal Behavior of Smartphones
Soowon Kang, Hyeonwoo Choi, Soo Young Park, **Chunjong Park**, Jemin Lee, Uichin Lee, and Sung-Ju Lee
ACM Conference on Conference on Mobile Computing and Networking (MobiCom), Oct. 2019

"Don't Bother Me. I'm Socializing!": A Breakpoint-Based Smartphone Notification System
Chunjong Park, Junsung Lim, Juho Kim, Sung-Ju Lee, and Dongman Lee
ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), Feb. 2017

Zaturi: We Put Together the 25th Hour for You. Create a Book for Your Baby
Bumsoo Kang, Chulhong Min, Wonjung Kim, Inseok Hwang, **Chunjong Park**, Seungchul Lee, Sung-Ju Lee, and Junehwa Song
ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), Feb. 2017

DX: Accurate Latency-based Congestion Feedback for Datacenters

Changhyun Lee, **Chunjong Park**, Keon Jang, Sue Moon, and Dongsu Han
IEEE/ACM Transaction on Networking, Feb. 2017

Accurate Latency-based Congestion Feedback for Datacenters
Changhyun Lee, **Chunjong Park**, Keon Jang, Sue Moon, and Dongsu Han
USENIX Annual Technical Conference (ATC), Jul. 2015

PATENTS

Non-Textual Communication and User States Management
Andrés Monroy-Hernández, **Chunjong Park**, and Fannie Liu
U.S. Patent App. Filed, September 2020

WORK EXPERIENCES

Content N — SEOUL, KOREA
Lead Software Engineer — OCT. 2013 ∼ MAR. 2014
Designed and developed back-end systems for a mobile arcade game, *Sushi Master*, using Amazon AWS, Node.js, MongoDB, and Redis. Developed data analysis tool and web interface for game statistics.

Company 100, Inc. — SEOUL, KOREA
Software Engineer — MAR. 2012 ∼ OCT. 2013
Designed and developed back-end systems for a mobile action-RPG game, *MetalBreaker*, using Amazon AWS, Node.js, MongoDB, and Redis. Developed data analysis tool and web interface for game statistics.

SQISoft, Inc. — SEOUL, KOREA
Software Engineer — DEC. 2010 ∼ MAR. 2012
Developed billing system for heat & electricity, and face recognition-based immigration clearance system deployed at the Incheon Int'l Airport.

Nexon Corp. — SEOUL, KOREA
Intern — SEP. 2010 ∼ DEC. 2010
Developed an in-game chat module in *BubbleFighter* online game.

TEACHING EXPERIENCE

Teaching Assistant — University of Washington
Introduction to Computer Communication Networks — WINTER 2018, FALL 2017

Teaching Assistant — KAIST
Introduction to Computer Networks — SPRING 2016, SPRING 2015

Teaching Assistant — KAIST
Networking for Smartphone Systems and IoT — FALL 2015

PROGRAMMING SKILLS

- **Language:** C, C++, Java, Javascript/Node.js, Python, Objective-C, Swift
- **OS/Platform:** Linux/Ubuntu, Android, iOS/WatchOS
- **Hardware:** Arduino
- **Framework/Library/Version Control:** OpenCV, PyTorch, TensorFlow, scikit-learn, Git

ACADEMIC SERVICES

Reviewer — IMWUT 2018, 2019, 2020, 2021 CHI 2019, 2020, 2021
MobileHCI 2019, ISWC 2020, IEEE Pervasive Comp. 2020
Student Volunteer — Ubicomp 2019, 2020

AWARDS

Microsoft W+D Summer 2020 Hackathon Winners — MICROSOFT, AUG. 2020
Outstanding Teaching Assistant Award — KAIST, MAR. 2017
Outstanding M.S. Thesis Award — KAIST, FEB. 2017
Outstanding Teaching Assistant Award — KAIST, MAR. 2016
The 9th Open Source SW World Challenge, Silver Medal — KOSSA, DEC. 2015