

# Changbeom Shim, PhD

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## Education

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<b>Korea University</b> PhD in Computer Science and Engineering · Advisor: Prof. Yon Dohn Chung	MAR 2014 - AUG 2019 <i>South Korea</i>
<b>Korea University</b> BE in Electronics and Information Engineering · On leave: SEPT 2008 - FEB 2011, Military Service	MAR 2007 - FEB 2014 <i>South Korea</i>

## Professional Experiences

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<b>School of Elec Eng, Comp and Math Sci at Curtin University</b> Research Associate · Project 3: An intelligent system for crime analysis and prevention based on multi-object tracking and situational awareness · Project 2: A data-driven system for privacy-preserving pandemic prevention · Project 1: Efficient large-scale multi-object tracking	NOV 2019 - Present <i>Australia</i>
<b>Database Laboratory at Korea University</b> Research Assistant · Project 3: A research on safe and convenient big data processing methods · Project 2: A research on privacy issues and privacy protection methods for social network services · Project 1: An intelligent system for crime detection/prevention and public security based on CCTV bigdata	MAR 2014 - AUG 2019 <i>South Korea</i>
<b>School of Engineering at RMIT University</b> Visiting Student of Dr Du Yong Kim · Project: A research on random finite set approach to database applications	JAN 2019 - FEB 2019 <i>Australia</i>
<b>Korea Institute of Science and Technology Information (KISTI)</b> Student Researcher · Project: Research on analysis and application platform technologies for science and technology big data	JUL 2013 - FEB 2014 <i>South Korea</i>
<b>3D Information Processing Laboratory at Korea University</b> Student Researcher	JAN 2011 - JUN 2013 <i>South Korea</i>

## Honors and Awards

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OCT 2021	Best Paper Award (First Runner-Up), Int. Conf. on Cont., Auto. and Info. Sci. (ICCAIS)
SEP 2020	Postdoctoral Fellowship Program, National Research Foundation (NRF) of Korea
FEB 2020	Global Talent Independent Program (Invitation to Data Science & ICT), The Australian Government
FEB 2019	KU Graduate Student Achievement Award, Korea University
JUL 2018	Student Paper Contest Award, Korea Computer Congress (KCC)
FEB 2018	Outstanding PhD Candidate Paper Award, Korea University
OCT 2017	Honorable Mention Award, IEEE Visual Analytics Science and Technology (VAST Challenge)
MAY 2015	Outstanding Paper Award, Korean DataBase Conference (KDBC)

## Research Interests

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Data Engineering, Signal Processing, and Machine Learning

- Query Processing
- Spatio-Temporal Search
- Graph Algorithms
- Visual Analytics
- Multi-Object Tracking

## Publications

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### Under Review

- U4** “DevSecOps for Small and Medium-sized Enterprises: A systematic literature review”
- U3** “CellTrackVis: interactive visualization for analyzing cell behaviors and ancestries”
- U2** “Audio-Visual Based Online Multi-Source Separation”
- U1** “Multi-object Tracking with an Adaptive GLMB Filter”

### International Journals

- J6** Wooil Kim, **Changbeom Shim**, and Yon Dohn Chung\*,  
“SkyFlow: A visual analysis of high-dimensional skylines in time-series,”  
Journal of Visualization, Vol. 24(5), pp. 1033-1050, 2021
- J5** **Changbeom Shim**, Gyuhyeon Sim, and Yon Dohn Chung\*,  
“Cohesive Ridesharing Group Queries in Geo-Social Networks,”  
IEEE Access, Vol. 8, pp. 97418-97436, 2020
- J4** Wooil Kim, **Changbeom Shim**, Wan Heo, Sungmin Yi, and Yon Dohn Chung\*,  
“Moving view field nearest neighbor queries,”  
Data & Knowledge Engineering, Vol. 119, pp. 58-70, 2019
- J3** **Changbeom Shim**, Wooil Kim, Wan Heo, Sungmin Yi, and Yon Dohn Chung\*,  
“Nearest close friend search in geo-social networks,”  
Information Sciences, Vol. 423, pp. 235-256, 2018
- J2** Sungmin Yi, **Changbeom Shim**, and Yon Dohn Chung\*,  
“Reverse View Field Nearest Neighbor Queries,”  
Information Sciences, Vol. 402, pp. 35-49, 2017
- J1** **Changbeom Shim**, Wooil Kim, Wan Heo, Sungmin Yi, and Yon Dohn Chung\*,  
“ $\ell$ -Close Range Friends Query on Social Grid Index,”  
IEICE Transaction on Information and Systems, Vol. 100-D(4), pp. 811-812, 2017

### International Conferences

- C3** **Changbeom Shim**\*, and Du Yong Kim,  
“Space-oriented Label Partitioning for Multi-object Tracking,” **Best Paper Award (First Runner-Up)**  
10th International Conference on Control, Automation and Information Sciences (ICCAIS), Oct 2021
- C2** Tran Thien Dat Nguyen, **Changbeom Shim**\*, and Wooil Kim,  
“Biological Cell Tracking and Lineage Inference Via Random Finite Sets,”  
18th IEEE International Symposium on Biomedical Imaging (ISBI), Apr 2021
- C1** Wooil Kim, **Changbeom Shim**, Ilhyun Suh, and Yon Dohn Chung\*,  
“A Visual Explorer for Analyzing Trajectory Patterns,” **Honorable Mention Award (Challenge)**  
12th IEEE Conference on Visual Analytics Science and Technology (VAST), Oct 2017

\* Corresponding author

## Patents

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- P2** Yon Dohn Chung, **Changbeom Shim**, and Wooil Kim,  
“Device for searching nearest close friends,”  
Oct 2020, Korea Registration Number: 10-2172236
- P1** Yon Dohn Chung, and **Changbeom Shim**,  
“Device and method for recommending ride sharing group, recording medium for performing the method,”  
Jan 2020, Korea Registration Number: 10-2064376

## Teaching Experiences

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### Lecturer at Korea University

FALL 2018 COSE214: Algorithm

### Teaching Assistant at Korea University

FALL 2017 COSE156: Python Programming  
SPRING 2016 COSE213: Data Structure  
FALL 2015 COSE242: Data Communication  
FALL 2014 COSE102: Computer Programming

## Technical Experiences

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<b>Computer Languages</b>	Java, Matlab, Python
<b>Others</b>	PostgreSQL, MySQL, Hadoop

## References

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References available upon request