

# Jiwon Kim

kjw6855@gmail.com  
<https://kjw6855.github.io>

## Research Interests

Software-defined networks, distributed systems, databases, operating systems, and system software for non-volatile memory

## Education

- |                     |  |
|---------------------|--|
| Mar 2015 - Aug 2016 | <b>Sungkyunkwan University</b> , Suwon, Republic of Korea<br>Master of Science in Platform Software<br>Major: <i>System Software for Non-Volatile Memory</i>   Advisor: Prof. Hwansoo Han<br>GPA: 4.33/4.5 |
| Mar 2011 - Feb 2015 | <b>Sungkyunkwan University</b> , Suwon, Republic of Korea<br>Bachelor of Science in Software Engineering<br>GPA: 4.06/4.5 (Major: 4.16/4.5)  |

## Professional Experience

- |                           |  |
|---------------------------|--|
| Sep 2016 - <i>Current</i> | <b>Atto Research</b> , Seongnam, Republic of Korea<br><i>Research Engineer</i> <ul style="list-style-type: none"><li>• Created flow-specific database for concurrent and consistent software-defined network updates</li><li>• Designed and developed SDN applications to manage underlay/overlay networks in private cloud</li><li>• Developed secure SDN controller cluster with TLS, RBAC, and flow monitoring</li><li>• Implemented domain-specific language and command-line interface for SDN controller</li></ul> |
| Jan 2013 - Feb 2013       | <b>Acryl Inc.</b> , Seoul, Republic of Korea<br><i>Intern</i> <ul style="list-style-type: none"><li>• Developed prototype of Android messenger application</li></ul>   |
| Feb 2012                  | <b>Hancom corp.</b> , Seongnam, Republic of Korea<br><i>Intern</i> <ul style="list-style-type: none"><li>• Participated in quality assurance team</li></ul>  |

## Research Experience

- |                     |  |
|---------------------|--|
| Mar 2014 - Oct 2016 | <b>Sungkyunkwan University</b> , Suwon, Republic of Korea<br><i>Research Assistant</i> - Advisor: Prof. Hwansoo Han <ul style="list-style-type: none"><li>• Participated in projects on system software for non-volatile memory</li></ul>  |
| Aug 2013 - Feb 2014 | <b>Purdue University</b> , West Lafayette, IN, USA<br><i>Research Intern</i> - NIPA-Purdue Capstone Project - Advisor: Prof. Eric Matson <ul style="list-style-type: none"><li>• Designed and developed road guidance system for visually impaired with Arduino and Android application</li></ul>                |
| Mar 2012 - Jan 2013 | <b>Sungkyunkwan University</b> , Suwon, Republic of Korea<br><i>Co-op Research Assistant</i> - Cooperative Project with AhnLab - Advisor: Prof. Jee-Hyong Lee <ul style="list-style-type: none"><li>• Analyzed existing thesis and source code on high-performance packet classification for Netfilter</li></ul> |

## Publications

Jiwon Kim, Jaekyun Shim, Hyunwoo Park, Yongjoo Song, JaeWoong Chung. "SDN MVCC: Experience with Concurrent and Consistent Software-Defined Networking Updates." (Manuscript in preparation)

Jungsik Choi, Jiwon Kim, Hwansoo Han. "Efficient Memory Mapped File I/O for In-Memory File Systems," *USENIX Workshop on Hot Topics in Storage and File Systems*, Jul. 2017.

Jungsik Choi, Joonwook Ahn, Jiwon Kim, Sungtae Ryu, Hwansoo Han. "In-Memory File System with Efficient Swap Support for Mobile Smart Devices," *IEEE Transactions on Consumer Electronics*, vol. 62(3), pp. 275-282, Aug. 2016.

## Patents

---

- US Jungsik Choi, Hwansoo Han, Jiwon Kim, “Memory mapping management method for nonvolatile main memory system,” US Patent 10,185,654, 2019.
- KR Yongjoo Song, Jiwon Kim, “Method, apparatus and computer program for tracking traffic using software defined networking,” KR 10-2066555, 2020.
- Hyunwoo Park, Jiwon Kim, Inwook Hwang, Jaeho Kim, Beomsoo Park, Yongjoo Song, “Method and computer program for handling trouble using packet-out message in software defined networking environment,” KR 10-1969304, 2019.
- Jiwon Kim, Hyunwoo Park, Inwook Hwang, Jaewoong Chung, “Method, apparatus and computer program for defending software defined network,” KR 10-1932656, 2018.
- Hyunwoo Park, Jiwon Kim, Inwook Hwang, Jaeho Kim, Beomsoo Park, Yongjoo Song, “Method and computer program for handling trouble using flow-mod message in software defined networking environment,” KR 10-1931543, 2018.
- Jiwon Kim, Inwook Hwang, Yongjoo Song, “Method, apparatus, and computer program for verifying host status information in a software defined network,” KR 10-1931139, 2018.
- Hwansoo Han, Jungsik Choi, Jiwon Kim, “Method for atomic update of memory mapped files stored in non-volatile memory and control apparatus thereof,” KR 10-1881038, 2018.
- Pending Jiwon Kim, Jaekyun Shim, Hyunwoo Park, Yongjoo Song, “Method, apparatus and computer program for operating a flow rule repository in a distributed controller environment of software defined network,” KR Application, 10-2019-0143455, 2019.
- Jiwon Kim, Jaekyun Shim, Hyunwoo Park, Yongjoo Song, “Method, apparatus and computer program for processing flow rule transactions in software defined network,” KR Application, 10-2019-0142670, 2019.
- Jiwon Kim, Jaekyun Shim, Yongjoo Song, Jonghyun Kwon, “Method, apparatus and computer program for operating the flow rules database in software defined network,” KR Application, 10-2019-0137601, 2019.
- Jiwon Kim, Yongjoo Song, “Method, apparatus and computer program for supporting distributed snat in a cloud environment in a software defined network,” KR Application, 10-2018-0152102, 2018.
- Jiwon Kim, Jaekyun Shim, Yongjoo Song, “Methods, apparatus and computer programs for providing high availability and reliability in software defined network,” KR Application, 10-2018-0152097, 2018.

## Teaching Experience

---

Mar 2015 - Oct 2016	<b>Sungkyunkwan University</b> , Suwon, Republic of Korea <i>Teaching Assistant</i> <ul style="list-style-type: none"><li>• SWE2013 - Software Creative Project (Spring 2016)</li><li>• SWE3010 - Compiler Design (Fall 2015)</li><li>• ICE2002 - Data Structures (Fall 2015)</li><li>• GEDB029 - Basis and Practice in Programming (Spring 2015)</li></ul>
---------------------	--

## Honors and Awards

---

Aug 2018	Hall of Fame, Atto Research
Dec 2015	Outstanding Paper Award, Korea Institute of Information Scientists and Engineers
Apr 2013	Dean's List, Sungkyunkwan University
Oct 2012	Dean's List, Sungkyunkwan University

## Scholarships

---

Mar 2016 - Aug 2016	SimSan Scholarship, Sungkyunkwan University
Mar 2015 - Aug 2016	Masters and Doctors Connected Track Scholarship, Sungkyunkwan University
Mar 2011 - Feb 2015	National Science & Technology Scholarship, Korea Student Aid Foundation