

Byungsoo Oh

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<http://byungsoo-oh.github.io>

EMPLOYMENT	Samsung Research, Samsung Electronics , Seoul, South Korea Software Engineer	Feb 2020–Present
EDUCATION	KAIST , Daejeon, South Korea M.S. in Computer Science	Mar 2018–Feb 2020
	Sogang University , Seoul, South Korea B.S. in Computer Science and Engineering Graduated with honors, Summa Cum Laude	Mar 2012–Feb 2018
RESEARCH INTERESTS	Distributed Computing, Cloud Computing, Systems for ML, Systems for Big Data	
REFEREED CONFERENCE PAPERS	<ul style="list-style-type: none">[1] Minhyeok Kweun, Goeun Kim, Byungsoo Oh, Seongho Jung, Taegeon Um, Woo-Yeon Lee, “PokéMem: Taming Wild Memory Consumers in Apache Spark”, IEEE International Parallel and Distributed Processing Symposium (IPDPS’22), Lyon, France, May 30 – June 3, 2022[2] Seungju Cho, Tae Joon Jun, Byungsoo Oh, Daeyoung Kim, “DAPAS: Denoising Autoencoder to Prevent Adversarial attack in Semantic Segmentation”, International Joint Conference on Neural Networks (IJCNN’20), Glasgow, UK, July 19-24, 2020[3] Byungsoo Oh, Daeyoung Kim, “Serverless-Enabled Permissioned Blockchain for Elastic Transaction Processing”, ACM/IFIP International Middleware Conference (Middleware’19 Poster), Davis, CA, USA, December 9-13, 2019[4] Byungsoo Oh, Tae Joon Jun, Wondeuk Yoon, Yunho Lee, Sangtae Kim, and Daeyoung Kim, “Enhancing Trust of Supply Chain Using Blockchain Platform with Robust Data Model and Verification Mechanisms”, IEEE International Conference on Systems, Man, and Cybernetics (SMC’19), Bari, Italy, October 6-9, 2019[5] Jiyong Han, Hyunseob Kim, Sehyeon Heo, Nakyung Lee, Daeyoun Kang, Byungsoo Oh, KyungTaek Kim, Wondeuk Yoon, Jaewook Byun, Daeyoung Kim, “GS1 Connected Car: An Integrated Vehicle Information Platform and Its Ecosystem for Connected Car Services based on GS1 Standards”, IEEE Intelligent Vehicles Symposium (IV’18), Changshu, China, June 26-29, 2018	
HONORS & AWARDS	National Full Scholarship , Korean Government	2018–2020
	Award for Top 1% Students in the Faculty of Engineering , Sogang University <ul style="list-style-type: none">• 2 semesters (Spring 2017, Fall 2017)	2017
	Academic Scholarship , Sogang University <ul style="list-style-type: none">• 6 semesters (Spring 2013, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017)	2013–2017

RESEARCH & DEVELOPMENT EXPERIENCE	<p>Data Research Team, Samsung Research Jan 2022–Present</p> <p>Conducting research on smart offloading (resource disaggregation) system to reduce preprocessing bottlenecks in DL workloads.</p> <ul style="list-style-type: none"> Implemented and evaluated <i>automatic partial offloading</i> of input pipelines with lightweight metric profiling, which enables distributing preprocessing tasks to both local and remote workers considering workload characteristics and resource environments. Designed and implemented partial offloading mechanism which is a core building block of our automatic offloading system, by extending tf.data.experimental.service.distribute. <p>Data Analytics Lab, Samsung Research Mar 2021–Dec 2021</p> <ul style="list-style-type: none"> Conducted research on enhancing robustness of memory management in Apache Spark. (IPDPS'22) Analyzed performance of Apache Druid, open source data warehouse system, in comparison with Google BigQuery and Snowflake for large-scale workloads. <p>Data Cloud Lab, Samsung Research Mar 2020–Feb 2021</p> <p>Developed and operated ML cloud system built on Kubernetes-based GPU clusters.</p> <ul style="list-style-type: none"> Developed a microservice that configures, deploys and manages ML jobs. Developed a system to manage end-to-end model lifecycle (similar to MLflow). <p>Data Engineering and Analytics Lab, KAIST Mar 2018–Feb 2020</p> <ul style="list-style-type: none"> Conducted research on improving scalability of permissioned blockchains using serverless computing. (Middleware'19 Poster) Conducted research on enabling permissioned blockchains to semantically validate transactions considering business context data. (SMC'19)
TEACHING EXPERIENCE	<p>TA, Introduction to System Programming (CS230), KAIST Spring 2019</p> <p>TA, Embedded Operating Systems (CS632), KAIST Fall 2018</p> <p>TA, Introduction to System Programming (CS230), KAIST Spring 2018</p>
SKILLS	<p>Advanced. C/C++ , JavaScript, Python, TensorFlow, Docker, Kubernetes, Apache Spark, Apache Druid, Hyperledger Sawtooth, Markdown, LaTeX</p> <ul style="list-style-type: none"> Open source contributions to https://github.com/tensorflow/tensorflow. Open source contributions to https://github.com/apache/spark. <p>Intermediate. Go, Java, Scala, PyTorch, gRPC, Apache Hive, Hadoop, Apache Airflow, Apache Calcite, Node.js, React</p>
LANGUAGES	Korean (<i>native</i>), English (<i>fluent</i> , TOEFL iBT: 103 / 120, OPIc Speaking: AL)