

# Jun Woo Park

## PERSONAL DATA

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## PUBLICATION

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- USENIX ATC'18 **Bigger, Longer, Fewer: what do cluster jobs look like outside Google?**  
Authors: Amvrosiadis G., **Park J.W.**, Ganger G.R., Gibson G.A., Baseman E., DeBardeleben N.  
An analysis of the differences and similarities between new traces consisting of job scheduler logs from one private and two HPC clusters, drawing comparison to well-known Google cluster trace.
- EUROSYS'18 **3Sigma: distribution-based cluster scheduling with runtime uncertainty**  
Authors: **Park J.W.**, Tumanov, A., Jiang A., Kozuch, M.A., Ganger, G. R.  
A scheduler that uses full distributions of relevant runtime history instead of single-point estimates (e.g., mean or median of relevant subset of historical runtimes) to cope with inherent variability of the job runtimes.
- EUROSYS'16 **TetriSched: global rescheduling with adaptive plan-ahead in dynamic heterogeneous clusters**  
Authors: Tumanov, A., Zhu, T., **Park, J.W.**, Kozuch, M. A., Harchol-Balter M., Ganger, G. R.  
A scheduler that leverages information supplied by the reservation system about jobs' deadlines and estimated runtimes to plan ahead in deciding whether to wait for a busy preferred resource type (e.g., machine with a GPU) or fall back to less preferred placement options.
- OSDI'14 **Scaling distributed machine learning with the parameter server**  
Authors: Li, M., Andersen, D.G., **Park, J.W.**, Smola, A.J., ...  
A parameter server framework for distributed machine learning problems. The framework manages asynchronous data communication between nodes, and supports flexible consistency models, elastic scalability, and continuous fault tolerance.

## WORK EXPERIENCE

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- JUN-AUG 2016 | Intern at TWO SIGMA INVESTMENT LP, New York  
*Job scheduler and Job scheduling log analysis*  
Analyzed and provided solutions to the challenges and issues in task scheduling in Two Sigma's on premise data centers using Zeppelin/Spark. Designed and implemented infrastructure to migrate legacy jobs to new Kubernetes based container cluster. Collection of job scheduling data for subsequent publications for Eurosys'18 and ATC'18.
- JUN-AUG 2013 | Intern at GOOGLE Inc., Mountain View  
*Machine learning based automation of infrastructure monitoring rule tuning*  
Analysis of infrastructure monitoring rule changes and bug reports of cluster application pipeline with several thousand job instances within Google Datacenter. Devised an anomaly detector based rule tuning algorithm for Site Reliability Engineers.
- MAR-JUN 2013 | Software Engineer at KULCLOUD NETWORKS, South Korea  
*Software Defined Networking*

Designed and implemented a Software Defined Network based network management system for Open-Stack. Developed a openflow controller for the enterprise network management system, which provides centralized route computation, traffic engineering.

MAY 2010-JUN 2013  
MAR 2009-DEC 2009

Financial Software Engineer at KOREA ASSET PRICING, South Korea  
*Risk management system for credit derivatives*

Designed and tested credit derivative risk management software system (full stack) providing services including daily Marked-to-Market valuation, stress testing, and other analytics data to financial firms including major investment banks and Insurance companies in Korea. Researched and drafted internal technical reports on credit linked derivative valuation methodology with a special focus on hybrid derivative products (payoff linked to combination of credit risk, stock prices, interest rates, and foreign exchange rates). Designed a computation back-end that leverages idle computing powers of quantitative researcher's workstations.

## EDUCATION

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*Current* Doctor of Philosophy in COMPUTER SCIENCE, **Carnegie Mellon University**, Pittsburgh  
Expected Graduation: MAY 2019  
Advisor: Prof. Gregory R. GANGER  
Topics: Cluster scheduling, cloud computing, cluster workload analysis

DECEMBER 2016 Master of Science in COMPUTER SCIENCE, **Carnegie Mellon University**, Pittsburgh  
MAY 2010 Bachelor of Science in ELECTRICAL AND COMPUTER ENGINEERING  
**Carnegie Mellon University**, Pittsburgh  
*University honors, CIT research honors*  
GPA: 4.0/4.0

## SCHOLARSHIPS AND CERTIFICATES

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Samsung Cultural Foundation (\$50,000 per year for academic years 2013-2018)  
Passed level 2 of Chartered Financial Analyst exam

## SKILLS

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Languages: English, Korean, C/C++, Java, Python, Scala, SQL, Visual Basic  
Frameworks: Hadoop YARN, Spark, Kubernetes, Optimization, Credit linked derivatives