Hyungro Lee

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EDUCATION

Indiana University, Bloomington, IN, Ph.D., Computer Science, 2019

Sungkyunkwan University, Seoul, Korea, B.S., Computer Education, 2007

RESEARCH INTERESTS

My research interests are parallel and distributed systems, HPC for large scale scientific applications

EMPLOYMENT

Postdoctoral Research Associate, Department of Electrical and Computer Engineering, Rutgers University, Piscataway, NJ 2018 - Present

Teaching Assistant, Department of Intelligent Systems Engineering, Indiana University 2014-2018

Research Intern, Microsoft, Redmond, WA Summer 2013

Research Assistant, School of Informatics, Computing, and Engineering, Indiana University, 2009-2013

Research Intern, Samsung Electronics, Giheung, Korea Summer 2010

Software Engineer, SK Communications, Seoul, Korea 2004-2008

Software Engineer, JPD Internet, Seoul, Korea 2002-2004

PUBLICATIONS

Eugen Hruska, Vivekanandan Balasubramanian, **Hyungro Lee**, Shantenu Jha, and Cecilia Clementi, "Extensible and Scalable Adaptive Sampling on Supercomputers", *Journal of Chemical Theory and Computation* 2020 16 (12), 7915-7925

Ma, Heng, Debsindhu Bhowmik, **Hyungro Lee**, Matteo Turilli, Michael Young, Shantenu Jha, and Arvind Ramanathan. "Deep generative model driven protein folding simulations." *In Parallel Computing: Technology Trends*, pp. 45-55. IOS Press BV, 2020.

Hyungro Lee, Heng Ma, Matteo Turilli, Debsindhu Bhowmik, Shantenu Jha, Arvind Ramanathan, "DeepDriveMD: Deep-Learning Driven Adaptive Molecular Simulations for Protein Folding", *Deep Learning on Supercomputers workshop in cooperation with TCHPC and held in conjunction with SC19*, November 2019

Hyungro Lee, Geoffrey Fox, "Big Data Benchmarks of High-Performance Storage Systems on Commercial Bare Metal Clouds", 2019 *IEEE International Conference on Cloud Computing.*

Hyungro Lee, Kumar Satyam, Geoffrey Fox, "Evaluation of Production Serverless Computing Environments", *Proceedings of the 3rd International Workshop on Serverless Computing. ACM, co-located with IEEE Cloud*, July 2018.

Hyungro Lee, Geoffrey Fox, "Event-driven Computing on HPC: Experiments with Scientific Applications", *RIKEN AICS International Symposium* in KOBE, JAPAN, February 2018.

Judy Qiu, Supun Kamburugamuve, **Hyungro Lee**, Jerome Mitchell, Rebecca Caldwelly, Gina

Bullockz, Linda Hayden, "Teaching, Learning and Collaborating through Cloud Computing Online Classes, *eduHPC workshop at SC17* September 2017.

Lee, Hyungro, and Geoffrey C. Fox. "Efficient Software Defined Systems Using Common Core Components." *Cloud Computing (CLOUD), 10th International Conference on IEEE*, 2017.

Hyungro Lee, Geoffrey Fox, "Software Defined Systems with DevOps Tools and Infrastructure Provisioning, *Ph.D. Forum at IPDPS* conference Orlando FL May 30-June 2, 2017.

Badi Abdul-Wahid, **Hyungro Lee**, Gregor von Laszewski, and Geoffrey Fox, "Scripting Deployment of NIST Use Cases" *Technical Report* January 20 2017.

Lee, H., Lee, M., Mohammed Ismail, W., Rho, M., Fox, G. C., Oh, S., & Tang, H. (2016). "MGEScan: a Galaxy-based system for identifying retrotransposons in genomes". *Bioinformatics*, 32(16), 2502-2504.

Von Laszewski, G., Wang, F., **Lee, H.**, Chen, H., & Fox, G. C. (2014, June). "Accessing multiple clouds with cloudmesh", In*Proceedings of the 2014 ACM international workshop on Softwaredefined ecosystems* (pp. 21-28). ACM.

Lee, Hyungro, et al. "Towards understanding cloud usage through resource allocation analysis on xsede". *Technical report*, March 25 2014.

Lee, Hyungro, "Using Bioinformatics Applications on the Cloud.", *Technical Report*, 2014.

Lee, Hyungro, "Virtualization Basics: Understanding Techniques and Fundamentals.", *Technical Report*, 2014.

Chae H, Jung I, **Lee H**, Marru S, Lee S, Kim S. "Bio and Health informatics meets Cloud: BioVLab as an example", *Health Information Science and Systems*, BioMed Central Ltd, 2013, 1, 6.

Lee H, Yang Y, Chae H, Nam S, Choi D, Tangchaisin P, Herath C, Marru S, Nephew K, Kim S. "BioVLAB-MMIA: A Cloud Environment for microRNA andmRNA Integrated Analysis (MMIA) on Amazon EC2", *IEEE Transactions on NanoBioscience*, 09/2012; 11(3):266-72.

von Laszewski, G., **Lee, H.**, Diaz, J., Wang, F., Tanaka, K., Karavinkoppa, S., Fox, G.C. and Furlani, T., 2012, September. "Design of an accounting and metric-based cloud-shifting and cloud-seeding framework for federated clouds and bare-metal environments." In *Proceedings of the 2012 workshop on Cloud services, federation, and the 8th open cirrus summit* (pp. 25-32). ACM.

Lee, Hyungro, et al. "BioVLAB-MMIA: a reconfigurable cloud computing environment for microRNA and mRNA integrated analysis." *Bioinformatics and Biomedicine (BIBM)*, 2011 IEEE International Conference on. IEEE, 2011.

TEACHING EXPERIENCE

ENGR-E 222: Intelligent Systems II	(Spring 2018)
INFO-I 523: Big Data Applications & Analytics	(Fall 2017)
CSCI-B 649: Cloud Computing	(Spring 2017)
INFO-I 590: Topics in Informatics	(Spring 2016)
INFO-I 524: Big Data Open Source Software and Projects	(Fall 2015)
BUEX-V 594: Business Global Executive Management	(Spring 2015)
Research Experiences for Undergraduate (REU) in Computing	(Summer 2014)

ACTIVITIES & TALKS

Presentation at *RIKEN AICS Youth group workshop*, Kobe, Japan 2018.

Participant at *SC 17 Student Volunteer Program*, Denver November 11 - 17 2017.

Presentation at *ADMI Symposium on Computing at Minority Institutions*, Virginia Beach, FL March 2017.

Undergraduate Mentor *Summer REU Research Program*, June 2014.

Participant at *SciPy Conference*, Austin, TX June 2013.

Presentation at *Targets and Tools for Therapeutic Development*, Cambridge Healthtech Institute, Boston, MA March 2013.

PROFESSIONAL SERVICE

Reviewer: Briefings in Bioinformatics, Online ISSN 1477-4054, 2018 - 2019

Reviewer: Concurrency and Computation Practice and Experience, Online ISSN 1532-0634, 2015 - 2018

TECHNICAL SKILLS

Language	C, Python, Bash Shell
Software	Horovod, Keras/PyTorch distributed data parallel, Dask, OpenStack, Ansible, Docker, Cloud REST APIs, HDF5, RabbitMQ, MongoDB, MySQL