Yuping Lu

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EDUCATION

University of Tennessee, Knoxville, TN   2013 - 2019
Ph.D. in Computer Science
Research Interests: Machine Learning, Graph Algorithms
Dissertation: Advances in Big Data Analytics: Algorithmic Stability and Data Cleansing
Advisor: Dr. Michael A. Langston | GPA: 3.91

Nanjing Agricultural University, Nanjing, China   2007 - 2011
BEng in Computer Science
Advisor: Dr. Huanliang Xu | GPA: 3.64

EXPERIENCE

Lawrence Berkeley National Laboratory (LBNL)   Berkeley, CA
Postdoctoral Scholar, the Advanced Light Source   2019 - present
- Improved multi-objective genetic algorithm for Lattice Optimization using Deep Learning.
- Achieved orders of magnitude speedup on HPC clusters.

Oak Ridge National Laboratory (ORNL)   Oak Ridge, TN
Graduate Research Assistant, the Atmospheric Radiation Measurement (ARM) Data Center   2017 - 2019
- Radar data (NEXRAD, ARM CSAPR) classification using convolutional neural networks.
- Detected outliers in streaming time series data from ARM distributed sensors.
Research Intern, the Scientific Data Group
- Scaling a PheWAS logistic regression R code on HPC clusters with pbdR tools using singularity container.   Summer 2017
- Implemented an R package pbdADIOS to connect R with ADIOS parallel middleware for I/O.   Summer 2016
  Most functions in this package are implemented with C++.

University of Tennessee, Knoxville   Knoxville, TN
Graduate Research Assistant, the Office of Information Technology   2014 - 2017
- University web server configuration and optimization.
- Google Search Appliance administration and implementation.
Graduate Research Assistant, Dr. Michael A. Langston's lab   2013 - 2014
- Implemented an R package biclique to enumerate maximal bicliques.
- Developed GrAPPA which is a web interface built on the Galaxy framework (Python) for graph-based tools.

Whale Cloud, a leading BSS/OSS system vendor for the Telecom industry   Nanjing, China
Implementation Engineer, worked on two main projects   2011 - 2012
VTR OCS Project   Santiago, Chile
- Determined customer's business requirements and produced technical proposal.
- Responsible for communication with development & testing teams in China for correct
  and timely development of customer's requirements.
Perusat Wimax CvBS Operations & Maintenance Project   Lima, Peru
- Responsible to ensure smooth running of system.
- Performed daily system checks in order to maintain system health.
- Configuration of new price plans and business requirements into the system as required
  by commercial and marketing departments.

Technical Skills

Programming languages: C/C++, Python, R, PHP, HTML+CSS+Javascript
Tools: PyTorch, Jupyter, NumPy, NetCDF, Docker, Git, LaTeX
HPC experience: ORNL CADES, LBNL NERSC

Activities and Awards

Reviewer for Computational Biology and Bioinformatics.   2020 - 2022
Graduate Student Senate Travel Award, University of Tennessee, Knoxville.   2018
Reviewer for the 9th International Workshop on Algorithms and Computation.   2015
Reviewer for the 9th International Workshop on Frontiers in Algorithmics.   2015
Student Volunteer for XSEDE14 : Atlanta, GA, USA.   July 13-18, 2014
Department excellence award, University of Tennessee, Knoxville   2013
Outstanding graduate and several scholarships, Nanjing Agricultural University   2007 - 2011

Publications

1. Enhancing the MOGA optimization process at ALS-U with Machine Learning
   Yuping Lu, Simon C. Leemann, Changchun Sun, Michael P. Ehrlichman, Thorsten Hellert, Hiroshi Nishimura, Marco Venturini
   IPAC 21

2. Clique Selection and its Effect on Paraclique Enrichment: An Experimental Study
   Yuping Lu, Charles A. Phillips, Elissa J. Chesler, Michael A. Langston
   Proceedings of the 12th International Conference on Bioinformatics and Computational Biology (BICOB 2020)

3. Biclique: Maximal Biclique Enumeration in Bipartite Graphs
   Yuping Lu, Charles A. Phillips, Michael A. Langston
   BMC Research Notes 13, 88 (2020)

4. A Robustness Metric for Biological Data Clustering Algorithms
   Yuping Lu, Charles A. Phillips, Michael A. Langston
   BMC Bioinformatics 2019, 20(Suppl 15):503

5. Convolutional Neural Networks for Hydrometeor Classification using Dual Polarization Doppler Radars
   Yuping Lu, Jitendra Kumar
   Proceedings of the 2019 IEEE International Conference on Data Mining Workshops (ICDMW 2019)

6. Detecting Outliers in Streaming Time Series Data from ARM Distributed Sensors
   Yuping Lu, Jitendra Kumar, Nathan Collier, Bhargavi Krishna, Michael A. Langston
   Proceedings of the 2018 IEEE International Conference on Data Mining Workshops (ICDMW 2018)

7. Enrichment vs Robustness: A Comparison of Transcriptomic Data Clustering Metrics
   Yuping Lu, Charles A. Phillips, Michael A. Langston
   BMC Bioinformatics 17 (10), 297, August 2016

8. Digital Gene Expression Profiling of the Phytophthora Sojae Transcriptome
   Wenwu Ye, Xiaoli Wang, Kai Tao, **Yuping Lu**, Tingting Dai, Suomeng Dong, Daolong Dou, Mark Gijzen, Yuanchao Wang
   Molecular Plant-Microbe Interactions, 24(12):1530–1539, December 2011

References

Simon C. Leemann, Staff Scientist
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Lawrence Berkeley National Laboratory
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Department of EECS
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Jitendra Kumar, Research Scientist
Climate Change Science Institute
Oak Ridge National Laboratory
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