

# Changxin Bai

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## Education

<b>WAYNE STATE UNIVERSITY</b> DOCTOR OF PHILOSOPHY IN BIG DATA RESEARCH LABORATORY Advisor: Dr. Shiyong Lu	2016-2022
<b>WAYNE STATE UNIVERSITY</b> MASTER OF COMPUTER SCIENCE DEPARTMENT	2012-2016
<b>XIDIAN UNIVERSITY</b> BACHELOR OF INTELLIGENT SCIENCE AND TECHNOLOGY	2009-2013

## Research Experience

Wayne State University - Dept of Computer Science ADVISOR: Dr. Shiyong Lu	Detroit, MI Aug. 2016 - Present
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- DATAVIEW System Design & Implementation

*Research Descriptions:* DATAVIEW (<https://github.com/ChangxinBai/DATAVIEW>) is a big data workflow management system. It uses Dropbox as the data cloud and Amazon EC2 as the compute cloud. Current research focuses on the performance and cost optimization for running workflows in clouds.

Wayne State University - Dept of Industrial and Systems Engineering ADVISOR: Dr. Yong-Yun Kim	Detroit, MI Aug. 2016 – May. 2017
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- DMDII VRWP System Design & Implementation

*Research Descriptions:* VRWP aims to advance a virtually guided Resistance Spot Welding (RSW) weldability qualification environment to advantage an OEM and suppliers to get a hit on the weldment design at the early stage of the new product design by using different machine learning methods.

## Publications Published

- Ahmed, Ishtiaq, Saeid Mofrad, Shiyong Lu, **Changxin Bai**, Fengwei Zhang, and Dunren Che. "SEED: Confidential Big Data Workflow Scheduling with Intel SGX Under Deadline Constraints." In 2020 IEEE International Conference on Services Computing (SCC), pp. 108-115. IEEE, 2020.
- Herath, J. Dinal, **Changxin Bai**, Guanhua Yan, Ping Yang, and Shiyong Lu. "RAMP: Real-Time Anomaly Detection in Scientific Workflows." In 2019 IEEE International Conference on Big Data (Big Data), pp. 1367-1374. IEEE, 2019.
- Fernando, Dinuni, Siddharth Kulshrestha, J. Dinal Herath, Nitin Mahadik, Yanzhe Ma, **Changxin Bai**, Ping Yang, Guanhua Yan, and Shiyong Lu. "SciBlock: A blockchain-based tamper-proof non-repudiable storage for scientific workflow provenance." In 2019 IEEE 5th International Conference on Collaboration and Internet Computing (CIC), pp. 81-90. IEEE, 2019.
- **Bai, Changxin**, Shiyong Lu, Ishtiaq Ahmed, Dunren Che, and Aravind Mohan. "LPOD: A Local Path Based Optimized Scheduling Algorithm for Deadline-Constrained Big Data Workflows in the Cloud." In 2019 R pp. 35-44. IEEE, 2019.
- Ahmed, Ishtiaq, Shiyong Lu, **Changxin Bai**, and Fahima Amin Bhuyan. "Diagnosis Recommendation Using Machine Learning Scientific Workflows." In 2018 IEEE International Congress on Big Data (BigData Congress), pp. 82-90. IEEE, 2018 (**Best Student Paper Award**).
- Wang, Lu, Lipi Acharya, **Changxin Bai**, and Dongxiao Zhu. "Transcriptome assembly strategies for precision medicine." Quantitative Biology 5, no. 4 (2017): 280-290.

- Li, Yan, **Changxin Bai**, and Chandan K. Reddy. "A distributed ensemble approach for mining healthcare data under privacy constraints." Information sciences 330 (2016): 245-259.
- Zhu, Dongxiao, Nan Deng, and **Changxin Bai**. "A generalized dSpliceType framework to detect differential splicing and differential expression events using RNA-Seq." IEEE transactions on nanobioscience 14, no. 2 (2015): 192-202.

## In Review

- Junwen Liu, Ziyun Xiao, Shiyong Lu, Dunren Che, Ming Dong, and **Changxin Bai**. "Infrastructure-level Support for GPU-Enabled Deep Learning in DATAVIEW." Future Generation Computing Systems.
- **Bai, Changxin**, Shiyong Lu, Dunren Che, and Junwen Liu. "Deadline-Constrained Big Data Workflow Scheduling in the Cloud: the LPOD Algorithm." IEEE Transactions on Services Computing.

## In Prep

- **Bai, Changxin**, Junwen Liu, Shiyong Lu, and Dunren Che. "A Generic Efficient Workflow Executor for the Optimizations of Run-time Execution of Workflow Schedules."

## Award

**Best Student Paper Award**, IEEE international Congress on Big Data

2018

## Teaching Experience

CSC3110 **Algorithm Design and Analysis**, Part Time Faculty

Spring 2022

CSC3020 **Java Programming**, Part Time Faculty

Winter 2022

CSC4110 **Software Engineering**, Teaching Assistant

Fall 2021

CSC6710 **Database Management Systems I**, Teaching Assistant

Fall 2019

CSC6710 **Database Management Systems I**, Teaching Assistant

Winter 2018

CSC5800 **Intelligent Systems: Algorithms and Tools**, Teaching Assistant

Fall 2017

CSC4710 **Introduction to Database Management Systems**, Teaching Assistant

Winter 2017

CSC4710 **Introduction to Database Management Systems**, Teaching Assistant

Fall 2016

## Mentoring

**Austin Abro**, Wayne State University

Fall 2019

## Professional Services

### INTERNAL REVIEWER

- **Comput. Commun.**: Computer Communications, 2022
- **GFCs**: Future Generation Computer Systems, 2022

### EXTERNAL REVIEWER

- **TCC**: IEEE Transactions on Cloud Computing, 2021
- **BIGDATA**: IEEE International Conference on Big Data, 2018-2021
- **SCC**: IEEE International Conference on Services Computing, 2020
- **CLOUD**: IEEE International Conference on Cloud Computing, 2018

## Professional References

Shiyong Lu (Ph.D. Supervisor)

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