# Curriculum Vitae – Hao Ji

Department of Computer Science
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## Education

- **Old Dominion University (ODU)**, USA *2011-2016*
  Ph.D., Computer Science
  Advisor: Dr. Yaohang Li
- **Hefei University of Technology (HFUT)**, China *2007-2010*
  M.S., Computer Software and Theory
  Advisor: Dr. Xiaoping Liu
- **Hefei University of Technology**, China *2003-2007*
  B.S., Mathematics and Applied Mathematics

## Research Interests

- Adversarial Machine Learning
- Computer Vision
- High Performance Computing

## Professional Experience

- **California State Polytechnic University**, Pomona, CA
  *Assistant Professor, Department of Computer Science* *2016 - Present*
- **Old Dominion University**, Norfolk, VA
  *Research Assistant, Department of Computer Science* *2011 - 2016*
- **Old Dominion University**, Norfolk, VA
  *Teaching Assistant, Department of Computer Science* *2011 - 2012, 2015*

## Peer-Reviewed Publications

- **Journal Papers**

  [1] **Hao Ji**, Michael Mascagni, and Yaohang Li. *Gaussian Variant of Freivalds' Algorithm for Efficient and Reliable Matrix Product Verification.* Monte Carlo Methods and Applications (MCMA), 273-284, 2020.

  [2] Weidong Li, Wei Li, Pai Song, and **Hao Ji**. *A Conservation-Moment-Based Implicit Finite Volume Lattice Boltzmann Method for Steady Nearly Incompressible Flows.* Journal of Computational Physics (JCP), 398, 2019.

  [3] **Hao Ji** and Yaohang Li. *A Breakdown-Free Block Conjugate Gradient Method.* BIT Numerical Mathematics (BIT), 57(2), 379–403, 2017.

  [4] **Hao Ji**, Yaohang Li, and Seth Weinberg. *Calcium Ion Fluctuations Alter Channel Gating in a Stochastic Luminal Calcium Release Site Model.* IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), 14(3), 611-619, 2017. (extended version)

[5] **Hao Ji** and Yaohang Li. *Block Conjugate Gradient Algorithms for Least Squares Problems*. Journal of Computational and Applied Mathematics (JCAM), 317: 203-217, 2017.

[6] Dazhi Chong, Hui Shi, Liuliu Fu, **Hao Ji**, and Gongjun Yan. *The impact of XBRL on information asymmetry: evidence from loan contracting*. Journal of Management Analytics (TJMA), 4(2), 145-158, 2017.

[7] Ashraf Yaseen, **Hao Ji**, and Yaohang Li. *A Load-Balancing Workload Distribution Scheme for Three-Body Interaction Computation on Graphics Processing Units (GPU)*. Journal of Parallel and Distributed Computing (JPDC), 87: 91-101, 2016.

[8] **Hao Ji**, Michael Mascagni, and Yaohang Li. *Convergence Analysis of Markov Chain Monte Carlo Linear Solvers using Ulam-von Neumann Algorithm*. SIAM Journal on Numerical Analysis (SINUM), 51(4): 2107-2122, 2013.

- **Book Chapters**

[1] Bo Ji, Wenlu Zhang, Rongjian Li, and **Hao Ji**. *Deep Learning Models for Biomedical Image Analysis*. Computational Models for Biomedical Reasoning and Problem Solving, IGI Global, ISBN: 978-1-522-57467-5, 2019.

[2] **Hao Ji** and Yaohang Li. *Monte Carlo Methods and their Applications in Big Data Analysis*. Mathematical Problems in Data Science - Theoretical and Practical Methods, Springer, ISBN: 978-3-319-25127-1, 2015.

- **Conference Papers (* Students)**

[1] David Hughes* and **Hao Ji**. *Enhancing Object Detection Using Synthetic Examples*. In the Proceedings of the IEEE 11th Annual Computing and Communication Workshop and Conference, 1398-1402, 2021.

[2] Philip Yao*, Andrew So*, Tingting Chen, and **Hao Ji**. *On Multiview Robustness of 3D Adversarial Attacks*. In the Proceedings of the Practice and Experience in Advanced Research Computing 2020 Conference, 372-378, 2020.

[3] Ibraheem Saleh* and **Hao Ji**. *Network Traffic Images: A Deep Learning Approach to the Challenge of Internet Traffic Classification*. In the Proceedings of the IEEE 10th Annual Computing and Communication Workshop and Conference, 329-334, 2020.

[4] Eitan Rothberg* , Tingting Chen, and **Hao Ji**. *Towards Better Accuracy and Robustness with Localized Adversarial Training*. In the Proceedings of the AAAI Conference on Artificial Intelligence, vol. 33, 10017-10018. 2019.

[5] Liang Zhang*, Ibraheem Saleh*, Sashi Thapaliya*, Jonathan Louie*, Jose Figueroa-Hernandez*, and **Hao Ji**. *An Empirical Evaluation of Machine Learning Approaches for Species Identification Through Bioacoustics*. In 2017 International Conference on Computational Science and Computational Intelligence, 489-494, IEEE, 2017.

[6] **Hao Ji**, Seth Weinberg, Min Li, Jianxin Wang, and Yaohang Li. *An Apache Spark Implementation of Block Power Method for Computing Dominant Eigenvalues and Eigenvectors of Large-Scale Matrices*. 2016 IEEE International Conferences on Big Data and Cloud Computing (BDCloud), Social Computing and Networking (SocialCom), Sustainable Computing and Communications (SustainCom), 554-559, Atlanta, GA, 2016.

[7] **Hao Ji**, Erich O'Saben, Rohit Lambi, and Yaohang Li. *Matrix Completion Based Model V2.0: Predicting the Winning Probabilities of March Madness Matches*, in proceedings of Modeling, Simulation, and Visualization Student Capstone Conference, Suffolk, VA, 2016.

[8] **Hao Ji**, Yaohang Li, and Seth Weinberg. *Calcium Ion Fluctuations Alter Channel Gating in a Stochastic Luminal Calcium Release Site Model*. The 7th International Sym-

posium on Bioinformatics Research and Applications (ISBRA2015), Norfolk, Virginia, 2015.

[9] **Hao Ji**, Erich O'Saben, Adam Boudion, and Yaohang Li. *March Madness Prediction: A Matrix Completion Approach*, in proceedings of Modeling, Simulation, and Visualization Student Capstone Conference, Suffolk, VA, 2015. (best paper award)

[10] **Hao Ji**, Masha Sosonkina, and Yaohang Li. *An Implementation of Block Conjugate Gradient Algorithm on CPU-GPU Processors.* The 1st International Workshop on Hardware-Software Co-design for High Performance Computing (Co-HPC2014), in conjunction with the SC'14 conference. New Orleans, LA, 2014.

[11] **Hao Ji** and Yaohang Li. *GPU Accelerated Randomized Singular Value Decomposition and Its Application in Image Compression*, in proceedings of Modeling, Simulation, and Visualization Student Capstone Conference, Suffolk, VA, 2014. (best paper award)

[12] **Hao Ji** and Yaohang Li. *Reusing Random Walks in Monte Carlo Methods for Linear Systems*, in proceedings of the International Conference on Computational Science, (ICCS2012), Omaha, 2012.

[13] Xiaoping Liu, Lin Du, **Hao Ji**, and Hui Shi. *The Visualization of Constraints Conflict in Collaborative Design.* The 13th International Conference on Computer Supported Cooperative Work in Design, (CSCWD2009), 32-37. IEEE, 2009.

## Patents and Software Copyrights

- Patent: A Method for Automatic Model Simplification and Evaluation in Steady-State Thermal Analysis, China. Patent No. 200910185331.6. (Co-Inventor) *May 9, 2012*
- Software: Analysis and Visualization Platform Software for Nonlinear System (NLSAV), China. Registration No. 2010SR034948. (Main Developer) *July 15, 2010*

## Grants

- PI. National Science Foundation (NSF) Major Research Instrumentation (MRI) program, "Acquisition of a Mass Storage System for Data Intelligence Research", $212,680 *2018-2021*
- Co-PI. California State Polytechnic University, Pomona: Strategic Interdisciplinary Research Grant (SIRG) Program, "Research Experience for Undergraduates in Big Data Security and Privacy", $15,000. *2020-2021*
- PI. California State Polytechnic University, Pomona: The Student Engagement through the Early Career Apprenticeship and Mentoring (SEECAM) Program , "Pose Estimation for Real-Time Avatar Animation", $2,500 *2020-2021*
- PI. California State Polytechnic University, Pomona: The Early Career Research Assistant (ECRA) program, "3D Reconstruction Using Multiple Depth Sensors", $3,500 *2019-2020*
- PI. California State Polytechnic University, Pomona: Donor Sponsored Research Projects, "Automated Data Preparation for Custom Object Detection", $9,500 *2019-2020*
- Collaborator. California State Polytechnic University, Pomona: Special Projects for Improving the Classroom Environment (SPICE) Program, "Bring Real-world Data and Projects to Data-focused Courses", $16,833. *2019-2020*

- PI. California State Polytechnic University, Pomona: The Summer Undergraduate Research Experience (SURE) program, $1,500 *2019*
- PI. California State Polytechnic University, Pomona: College of Science Discovery Through Research (DTR) Summer Support Program, "Bridging the Gap between Synthetic and Real Data for Semantic Image Segmentation", $8,000 *2019*
- PI. California State Polytechnic University, Pomona: The Summer Undergraduate Research Experience (SURE) program, $6,000 *2018*
- PI. California State Polytechnic University, Pomona: Research Scholarship, and Creative Activity (RSCA), "Towards Solutions to Massive-Scale Matrix Completion Problems", $5000 *2016-2017*
- PI. California State Polytechnic University, Pomona: Faculty Mini-Grant Program, "A Content-Based Recommender System Using Human Face Photos for Personalization", $1000 *2016-2017*

## Professional Activities

- National Science Foundation (NSF) Panelist, 2018
- Guest Editor for Information Discovery and Delivery on Special issue on Knowledge Discovery (2019)
- Journal Reviewer: IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Network Science and Engineering, IEEE Access, BMC Bioinformatics, Journal of Computational and Applied Mathematics, Big Data Research, and the SIAM Journal on Scientific Computing
- Program/Technical Committee
  - IEEE Annual Computing and Communication Workshop and Conference, 2020-2021
  - Practice and Experience in Advanced Research Computing, 2021

## Certificates

- Modeling and Simulation Certificate in Computing and Informatics, ODU *May 11, 2013*
- Graduate Teacher Assistant Instructor Institute Certificate, College of Sciences, ODU *Aug. 24, 2012*

## Professional Memberships

- Institute of Electrical and Electronics Engineers (IEEE)