

# Hieu T. Pham

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Curriculum Vitae

July 13, 2023

## Education

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### Ph.D. Industrial Engineering - Operations Research and Analytics

*Iowa State University*

2018

### M.S. Mathematics

*Kansas State University*

2015

### B.S. Mathematics

*Tennessee Technological University*

2014

## Academic Experience

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### Assistant Professor of Management Science

*The University of Alabama in Huntsville*

2021 – Present

### Graduate Research/Teaching Assistant

*Iowa State University*

2016 – 2018

### Graduate Teaching Assistant

*Kansas State University*

2014 – 2016

## Industry Experience

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### Machine Learning Engineer

*Syngenta Group*

2020 – 2021

### Research Data Scientist

*Syngenta Group*

2018 – 2020

### Data Scientist

*Omni Analytics Group*

2017 – 2018

## Publications

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### Published.....

1. H. Pham, J. Reisner, A. Swift, S. Olafsson, and S. Vardeman. "Crop phenotype prediction using biclustering to explain genotype-by-environment interactions". *Frontiers in Plant Science*. 2022; 13.
2. S. Khaki, N. Safaei, H. Pham, and L. Wang. "Wheatnet: A lightweight convolutional neural network for high-throughput image-based wheat head detection and counting". *Neurocomputing*. 2022; 489:78–89.

3. S. Moeinizade, H. Pham, Y. Han, A. Dobbels, and G. Hu. "An applied deep learning approach for estimating soybean relative maturity from UAV imagery to aid plant breeding decisions". *Machine Learning with Applications*. 2022; 7:100233.
4. L. Mosley, H. Pham, X. Guo, Y. Bansal, E. Hare, and N. Antony. "Towards a systematic understanding of blockchain governance in proposal voting: A dash case study". *Blockchain: Research and Applications*. 2022; 100085.
5. S. Khaki, H. Pham, Z. Khalilzadeh, Z. Masoud, N. Safaei, Y. Han, W. Kent and L. Wang. "High-Throughput Image-Based Plant Stand Count Estimation Using Convolutional Neural Networks". *PLOS One*. 2022; 17(7), e0268762.
6. M. Shahhosseini, G. Hu., and H. Pham. "Optimizing Ensemble Weights and Hyperparameters of Machine Learning Models for Regression Problems". *Machine Learning with Applications*. 2022; 100251.
7. S. Khaki, H. Pham, and L. Wang. "Simultaneous corn and soybean yield prediction from remote sensing data using deep transfer learning". *Nature Scientific Reports*. 2021; 11(1):1–14
8. Y. Han, J. Cameron, L. Wang, H. Pham, and W. Beavis. "Dynamic Programming for Resource Allocation in Multi-allelic Trait Introgression". *Frontiers in Plant Science*. 2021; 12:1181.
9. S. Khaki, H. Pham, Y. Han, A. Kuhl, W. Kent, and L. Wang. "DeepCorn: A semi-supervised deep learning method for high-throughput image-based corn kernel counting and yield estimation". *Knowledge-Based Systems*. 2021; 106874.
10. S. Moeinizade, Y. Han, H. Pham, G. Hu, and L. Wang. "A look-ahead Monte Carlo simulation method for improving parental selection in trait introgression". *Nature Scientific Reports*. 2021; 11(3918).
11. J. Li, J. Reisner, H. Pham, S. Olafsson, and S. Vardeman. "Biclustering with missing data". *Information Sciences*. 2020; 510:304 – 316.
12. H. Pham and S. Olafsson. "On Cesáro averages for weighted trees in the random forest". *Journal of Classification*. 2020; 37:223 – 236.
13. S. Khaki, H. Pham, Y. Han, A. Kuhl, W. Kent, and L. Wang. "Convolutional neural networks for image-based corn kernel detection and counting". *Sensors*. 2020; 20:2721.
14. H. Pham and S. Olafsson. "Bagged ensembles with tunable parameters". *Computational Intelligence*. 2019; 35:184 – 203.
15. J. Reisner, H. Pham, S. Olafsson, and S. Vardeman. "biclusterm: An R package for biclustering with missing values", *The R Journal*. 2019; 11(2):69–84.

### Submitted

- K. Wallach, H. Pham, A. Koschmann, and G. Arwade. "Should We Face It? An Empirical Study of Social Media Video and User Engagement". Submitted to *Journal of Interactive Marketing*.
- J. Mok, H. Pham, and W. Mok. "Combining Expert Knowledge and Sentence Classification for Contract Law Cases: A Natural Language Processing Approach", Submitted to *Artificial Intelligence and Law*.
- C. Deverapalli, W. Orman, R. Patnayakuni, H. Pham and R. Weber. "The Effects of a Consistent, Transparent Scholarship Policy on Student Graduation Rates". Submitted to *The Journal of Higher Education*.
- Y. Bansal, E. Hare, H. Pham, and L. Mosley. "Interact and Trade with the Uniswap Platform through uniswapR". Submitted to *The R Journal*.

## In Preparation.....

- o H. Pham, R. Patnayakuni, and L. Mosley. "Proper Proposers and Skipped Slots: A Ranking and Segmentation Study of Validator Behavior". Target: *WIRES Data Mining and Knowledge Discovery*.

## Peer-reviewed Conference Proceedings and Presentations

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1. K. Wallach, H. Pham, A. Koschmann, and G. Arwade. "Face Size and User Engagement in Social Media Videos: A Machine Learning Approach". Target: *Marketing Science*.
2. L. Mosley, H. Pham, Y. Bansal, E. Hare, and C. Mwanza. 2023. *Image-Based Sorghum Head Counting When You Only Look Once*, Proceedings of the 56th Hawaii International Conference on System Sciences, Maui, HI.
3. H. Pham. 2022. *Towards a Systematic Understanding of Blockchain Governance in Proposal Voting: A Dash Case Study*, 2022 INFORMS Annual Meeting, Indianapolis, IN.
4. S. Moeinzade, Y. Han, H. Pham, G. Hu, and L. Wang. 2020. *A Look-ahead Monte Carlo Simulation Method for Improving Parental Selection in Trait Introgression*, 2020 INFORMS Annual Virtual Meeting.
5. S. Khaki, H. Pham, Y. Han, A. Kuhl, W. Kent, and L. Wang. 2020. *Convolutional Neural Networks for Image-Based Corn Kernel Detection and Counting*, 2020 CVPR: The 1st International Workshop and Prize Challenge on Agriculture-Vision: Challenges & Opportunities for Computer Vision in Agriculture.
6. E. Almeda-Basora and H. Pham. 2019. *A Sequentially Updating Bayesian Network that Beats the Oddsmakers by Predicting the Total Number of Points Scored in NBA Games*, Midwest Sports Analytics Meeting, Pella, IA.
7. H. Pham. 2019. *Genetics by Environment Interaction*, INFORMS Student Chapter at Iowa State University, Ames, IA.
8. Y. Han and H. Pham. 2019. *Data Analytics in Agricultural Business*, 2nd Midwest Statistical Machine Learning Colloquium, Ames, IA.
9. H. Pham. 2019. *Biclustering to Explain Genotype-by-Environment Interactions*, Syngenta Data Science Community of Practice, Raleigh, NC.
10. H. Pham. 2019. *The Digital Future of Agriculture*, 2019 INFORMS Annual Meeting, Seattle, WA.
11. F. Amini, M. Shahhosseini, G. Hu, and H. Pham. 2019. *Improving Prediction Accuracy of Regression Problems with Optimization-based Ensemble Learning and a Two-layer Feature Selection Method*, 2019 Midwest Big Data Hub All-Hands Meeting, Chicago, IL.
12. L. Mosley, H. Pham, Y. Bansal, and E. Hare. 2019. "Sorghum Head Image Analysis When You Only Want to Look Once", In *Proceedings of the Second International Workshop on Machine Learning for Cyber-Agricultural Systems*.
13. M. Shahhosseini, G. Hu and H. Pham. 2019. "Optimizing Ensemble Weights for Machine Learning Models: A Case Study for Housing Price Prediction", In *Proceedings of the 2019 INFORMS Conference on Service Science*.
14. H. Pham. 2018. *Data Analytics in Agricultural Business*, 2018 INFORMS Annual Meeting, Phoenix, AZ.

15. H. Pham. 2018. *Biclustering for Sparse Data*, Iowa State University IMSE Graduate Seminar, Ames, IA.
16. J. Reisner and H. Pham. May 2018. *Biclustering for Sparse Data*, 1st Midwest Statistical Machine Learning Colloquium, Ames, IA.

## Funding

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1. Data Lifecycle and Model Governance, *Franklin Creative Solutions*, 09/2022 - 12/2022, PI. Total: \$10,000.
2. College of Business Summer 2022 Course Innovation Grant, *University of Alabama in Huntsville*, 05/2022 - 08/2022, PI. Total: \$7,500.
3. New Faculty Research Grant, *University of Alabama in Huntsville*, 04/2022 - 05/2023, PI. Total: \$10,000.

## Teaching Experience

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### The University of Alabama in Huntsville.....

- MSC 550: Introduction to Analytics and Programming
- IS 571: Business Analytics and AI
- MSC 615: Decision Modeling
- MSC 650: Special Topics - Deep Learning
- MSC 692: Business Analytics Practicum

### Iowa State University.....

- IE 361: Statistical Quality Assurance
- IE 590: Special Topics - Analytics Projects for Improved Decision Making in the Financial Sector
- IE 590: Special Topics - Analytics Projects for Improved Decision Making in the Agricultural Sector

### Kansas State University.....

- Math 100: College Algebra
- Math 240: Elementary Differential Equations

## Honors and Awards

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- **July 2019:** 1st Place in Image-Based Sorghum Head Object Detection and Counting Machine Learning Competition  
Second International Workshop on Machine Learning for Cyber-Agricultural Systems
- **May 2018:** Research Excellence Award  
Iowa State University
- **May 2018:** Best Poster - *Biclustering for Sparse Data*  
1st Midwest Statistical Machine Learning Colloquium
- **April 2018:** Most Popular Poster - *Biclustering for Sparse Data*  
6th Annual IMSE Research Symposium

- **Dec. 2017:** Teaching Excellence Award  
Iowa State University
- **April 2017:** Most Popular Poster - *Understanding why NBA Teams with Superior Talent Lose in the Playoffs*  
5th Annual IMSE Research Symposium
- **2014 – 2016:** Timothy R. Donoghue Graduate Scholarship  
Kansas State University

## Mentoring

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### The University of Alabama in Huntsville.....

- **Jan. 2022 – Present:** Charity Mwanza, Masters of Science in Business Analytics Student - Thesis Chair

## Professional Service

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- **Invited Manuscript Reviewer:** *Agronomy; Expert Systems with Applications; IEEE Systems; International Journal of Information Security and Privacy; Machine Learning with Applications; Mathematics; Micromachines; Pattern Recognition; Plant Phenomics; Sensors; Statistics in Medicine*
- **2022:** Session Chair, INFORMS Annual Meeting 2022
- **2022:** Tenure Track Management Science Search Committee Member, UAH College of Business
- **2021:** Information Systems, Supply Chain and Analytics, Department Chair Search Committee Member, UAH College of Business
- **2019:** Organizing Committee Member, 2nd Midwest Statistical Machine Learning Colloquium

## Professional Societies

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- **2018 – Present:** INFORMS, Membership

## Open-Source R Packages

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- **biclustermd:** Access Link
- **uniswappeR:** Access Link