

Amirhessam Tahmassebi

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EDUCATION

FLORIDA STATE UNIVERSITY PHD IN COMPUTATIONAL SCIENCE

Aug 2018 | Tallahassee, FL • Cum. GPA: 3.969/4.0 • Advisor: Dr. Anke Meyer-Baese

FLORIDA STATE UNIVERSITY MSc IN COMPUTATIONAL SCIENCE

Dec 2017 | Tallahassee, FL • Cum. GPA: 3.969/4.0 • Advisor: Dr. Anke Meyer-Baese

THE UNIVERSITY OF AKRON MSc IN PHYSICS

Aug 2015 | Akron, OH • Cum. GPA: 3.982/4.0 • Advisor: Dr. Alper Buldum

UNIVERSITY OF TEHRAN BSc IN PHYSICS

July 2010 | Tehran, Iran • Cum. GPA: 3.1/4.0 • Advisor: Dr. Hamidreza Moshfegh

WORKING EXPERIENCE: INDUSTRY

EXXONMOBIL CORPORATION | SENIOR DATA SCIENTIST

January 2020 – Present | Houston, TX

- Lead in the design, development, and implementation of the interpretable Rules-Based model for High Density Polyethylene (HDPE) and Linear Low Density Polyethylene (LLDPE) sectors to incorporate customer segmentation and recommend pricing to maximize the variable margin for each month of revenue for CANUSA (Canada and USA).
- Lead in the design, development, and implementation of the interpretable Transaction-Specific-Pricing model for Polypropylene (PP) sector to apply customer segmentation using clustering algorithms and machine learning and recommend pricing to maximize the variable margin for each month of revenue for Americas (Canada, USA, and Mexico).
- Lead in the design, development, and implementation of an Attrition model for the Polyethylene (PE) sector of the EMCC to predict the customer churn with statistical significance in the future months with the hope to incorporate better solutions for negotiations of the new contracts with customers due to unprecedented things such as low demand and COVID19.
- Tools: Python, Spark, SQL, MLlib, Pandas, Scikit-Learn, XGBoost, GLM-Net, TensorFlow, Keras, Azure, AWS, JIRA, Git, GitHub, Jupyter Notebook.

CERNER CORPORATION | DATA SCIENTIST

October 2018 – December 2019 | Kansas City, MO

- Building 90-day pediatric asthma re-admission model for Children's Hospital of Orange County (CHOC).
- Building 30-day pediatric all cause re-admission model for 17 hospitals around the US.
- Building predictive model for bundled payments care improvement advanced (BPCI-A) for 37 defined CMS episodes for Navi-Health.
- Tools: Python, Spark, SQL, MLlib, Pandas, Scikit-Learn, XGBoost, GLM-Net, TensorFlow, Keras, AWS, JIRA, Git, GitHub, Jupyter Notebook.

MYNOMX INC. | DATA SCIENTIST

June 2017 – August 2017, May 2018 – August 2018 | Palo Alto, CA

- Developed Machine Learning algorithms for population health management on Stanford and UK Bio-Bank databases.
 - Took statistical models and transformed them into robust and scalable codes using Spark and ML library.
 - Performed integration of the algorithms and data sources.
 - Implemented new codes at scale and to meet performance guidelines.
 - Tools: Python, R, Spark, Scikit-Learn, Cox Regression, TensorFlow, Keras, Lifelines, MLlib, FancyImpute, Midas, BitBucket, JIRA, Apache Zeppelin.
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WORKING EXPERIENCE: ACADEMIC

FLORIDA STATE UNIVERSITY | GRADUATE TEACHING ASSISTANT

August 2015 – May 2018 | Tallahassee, FL

- Developed an under-graduate level course in High Performance Computing including OpenMP, MPI, CUDA, and OpenACC programming.
- Working with Programs in Interdisciplinary Computing (PIC) at Florida State University as an Instructor for Spreadsheets in Business (CGS 2518).

THE UNIVERSITY OF AKRON | GRADUATE TEACHING ASSISTANT

August 2013 – August 2015 | Akron, OH

- Worked in Physics (I, II) LABS.
- Instructor for Physics Life Science.
- Grader for Astro-Physics & Classical Physics (I, II).

UNIVERSITY APPOINTMENTS

DEPARTMENT OF SCIENTIFIC COMPUTING, FLORIDA STATE UNIVERSITY | AFFILIATED FACULTY

October 2018 – Present | Tallahassee, FL

- Leading Dr. Meyer-Baese's group and directing the MS and PhD students.
- Collaborating on different projects including deep learning in medical imaging, network analysis, and machine learning.

RESEARCH

FLORIDA STATE UNIVERSITY August 2015 – August 2018 | Tallahassee, FL

Working on a Data Mining Project under supervision of Dr. Anke Meyer-Baese to apply Machine Learning algorithms on fMRI and MRI data. I am also working on Deep Learning algorithms to build predictive models for various databases in collaboration on several fields including neuro-imaging, breast cancer, dementia, energy consumption, stock market, ground motion modeling, airfoil noise, distance-learning, and engineering problems.

THE UNIVERSITY OF AKRON August 2013 – August 2015 | Akron, OH

Worked with Dr. Alper Buldum for two years. My Thesis topic was Fluid Flow Through Carbon Nanotubes & Graphene Based Nanostructures. We implemented a Molecular Dynamics code written in Fortran for three different models, containing Single-Walled Carbon Nanotubes, Graphene Wall as structures, and Liquid Argon as flow of the system. The application of that would be found in the field of Drug Delivery.

PUBLICATIONS

BOOK CHAPTERS & THESES

- Mohebbi, B., **Tahmassebi, A.**, Meyer-Baese, A., & Gandomi, A. H. (2020). Probabilistic neural networks: a brief overview of theory, implementation, and application. In Handbook of Probabilistic Models (pp. 347-367). Butterworth-Heinemann.
- **Tahmassebi, A.**, & Gandomi, A. H. (2018). Genetic programming based on error decomposition: A big data approach. In Genetic Programming Theory and Practice XV (pp. 135-147). Springer, Cham.
- **Tahmassebi, A.**, (2018). Pattern Recognition in Medical Imaging: Supervised Learning of fMRI & MRI Data (Doctoral dissertation, Florida State University).
- **Tahmassebi, A.**, (2015). Fluid Flow Through Carbon Nanotubes And Graphene Based Nanostructures (Master thesis, University of Akron).

JOURNAL ARTICLES

- Meyer-Baese, A., Morra, L., **Tahmassebi, A.**, Lobbes, M., Meyer-Baese, U., & Pinker, K. (2020). AI-Enhanced Diagnosis of Challenging Lesions in Breast MRI: A Methodology and Application Primer. Journal of Magnetic Resonance Imaging.
- **Tahmassebi, A.**, Wengert, G. J., Helbich, T. H., Bago-Horvath, Z., Alaei, S., Bartsch, R., & Morris, E. A. (2018). Impact of Machine Learning With Multiparametric Magnetic Resonance Imaging of the Breast for Early Prediction of Response to Neoadjuvant Chemotherapy and Survival Outcomes in Breast Cancer Patients. Investigative Radiology.

- **Tahmassebi, A.**, Gandomi, A. H., Fong, S., Meyer-Baese, A., & Foo, S. Y. (2018). Multi-stage optimization of a deep model: A case study on ground motion modeling. *PloS one*, 13(9), e0203829.
- **Tahmassebi, A.**, Gandomi, A. H., Schulte, M. H., Goudriaan, A. E., Foo, S. Y., & Meyer-Baese, A. (2018). Optimized Naive-Bayes and Decision Tree Approaches for fMRI Smoking Cessation Classification. *Complexity*, 2018.
- **Tahmassebi, A.**, & Gandomi, A. H. (2018). Building energy consumption forecast using multi-objective genetic programming. *Measurement*, 118, 164-171.
- **Tahmassebi, A.**, Gandomi, A. H., & Meyer-Baese, A. (2018). Stock Risk Assessment via Multi-Objective Genetic Programming. *Journal of Postdoctoral Research*, 6(3).
- **Tahmassebi, A.**, Pinker-Domenig, K., Wengert, G., Helbich, T., Bago-Horvath, Z., & Meyer-Baese, A. (2018). Determining the importance of parameters extracted from multi-parametric mri in the early prediction of the response to neo-adjuvant chemotherapy in breast cancer. *Medical Imaging*.
- **Tahmassebi, A.**, Gandomi, A. H., McCann, I., Schulte, M. H., Schmaal, L., Goudriaan, A. E., & Meyer-Baese, A. (2017). fMRI Smoking Cessation Classification. *IEEE Transactions on Cybernetics*.

CONFERENCE ARTICLES

- **Tahmassebi, A.**, Meyer-Bäse, U., & Meyer-Bäse, A. (2020, May). Modeling disease spreading process induced by disease agent mobility in Dementia networks. In *Pattern Recognition and Tracking XXXI* (Vol. 11400, p. 114000E). International Society for Optics and Photonics.
- Meyer-Bäse, L., Saad, F., & **Tahmassebi**, A. (2020, February). Controllability of structural brain networks in dementia. In *Medical Imaging 2020: Biomedical Applications in Molecular, Structural, and Functional Imaging* (Vol. 11317, p. 113171W). International Society for Optics and Photonics.
- Nagasubramanian, G., Sakthivel, R. K., Patan, R., Ehtemami, A., Meyer-Baese, **A.**, **Tahmassebi**, A., & Gandomi, A. H. (2020, April). Detection and isolation of black hole attack in mobile ad hoc networks-a review. In *Disruptive Technologies in Information Sciences IV* (Vol. 11419, p. 114190N). International Society for Optics and Photonics.
- Meyer-Bäse, A., Foo, S., **Tahmassebi, A.**, Meyer-Bäse, U., Amani, A. M., Götz, T., & Pinker, K. (2020, May). Large-scale graph networks and AI applied to medical image data processing. In *Computational Imaging V* (Vol. 11396, p. 1139605). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Ehtemami, A., Mohebal, B., Gandomi, A. H., Pinker, K., & Meyer-Baese, A. (2019, May). Big data analytics in medical imaging using deep learning. In *Big Data: Learning, Analytics, and Applications* (Vol. 10989, p. 109890E). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Mohebal, B., Meyer-Baese, L., Solimine, P., Pinker, K., & Meyer-Baese, A. (2019, May). Determining driver nodes in dynamic signed biological networks. In *Smart Biomedical and Physiological Sensor Technology XV* (Vol. 11020, p. 110200A). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Mohebal, B., Solimine, P., Meyer-Baese, U., Pinker, K., & Meyer-Baese, A. (2019, May). Model reduction of structural biological networks by cycle removal. In *Smart Biomedical and Physiological Sensor Technology XV* (Vol. 11020, p. 110200K). International Society for Optics and Photonics.
- Mohebal, B., **Tahmassebi, A.**, Gandomi, A. H., & Meyer-Baese, A. (2019, May). A big data inspired preprocessing scheme for bandwidth use optimization in smart cities applications using Raspberry Pi. In *Big Data: Learning, Analytics, and Applications* (Vol. 10989, p. 1098902). International Society for Optics and Photonics.
- **Tahmassebi, A.** (2018, May). ideeple: Deep learning in a flash. In *Disruptive Technologies in Information Sciences* (Vol. 10652, p. 106520S). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Gandomi, A. H., McCann, I., Schulte, M. H., Goudriaan, A. E., & Meyer-Baese, A. (2018, July). Deep Learning in Medical Imaging: fMRI Big Data Analysis via Convolutional Neural Networks. In *Proceedings of the Practice and Experience on Advanced Research Computing* (p. 85). ACM.
- **Tahmassebi, A.**, Gandomi, A. H., & Meyer-Baese, A. (2018, July). An Evolutionary Online Framework for MOOC Performance Using EEG Data. In *2018 IEEE Congress on Evolutionary Computation (CEC)* (pp. 1-8). IEEE.

- **Tahmassebi, A.**, Gandomi, A. H., & Meyer-Baese, A. (2018, July). A Pareto Front Based Evolutionary Model for Airfoil Self-Noise Prediction. In 2018 IEEE Congress on Evolutionary Computation (CEC) (pp. 1-8). IEEE.
- **Tahmassebi, A.**, Gandomi, A. H., McCann, I., Schulte, M. H., Schmaal, L., Goudriaan, A. E., & Meyer-Baese, A. (2017, June). An evolutionary approach for fMRI big data classification. In Evolutionary Computation (CEC), 2017 IEEE Congress on (pp. 1029-1036). IEEE.
- **Tahmassebi, A.**, Gandomi, A. H., & Meyer-Bäse, A. (2017, July). High performance gp-based approach for fmri big data classification. In Proceedings of the Practice and Experience in Advanced Research Computing 2017 on Sustainability, Success and Impact (p. 57). ACM.
- **Tahmassebi, A.**, Pinker-Domenig, K., Wengert, G., Lobbes, M., Stadlbauer, A., Romero, F. J., ... & Meyer-Bäse, A. (2017, May). Dynamical graph theory networks techniques for the analysis of sparse connectivity networks in dementia. In Smart Biomedical and Physiological Sensor Technology XIV (Vol. 10216, p. 1021609). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Pinker-Domenig, K., Wengert, G., Lobbes, M., Stadlbauer, A., Wildburger, N. C., ... & Botella, G. (2017, May). The driving regulators of the connectivity protein network of brain malignancies. In Smart Biomedical and Physiological Sensor Technology XIV (Vol. 10216, p. 1021605). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Amani, A. M., Pinker-Domenig, K., & Meyer-Baese, A. (2018, March). Determining disease evolution driver nodes in dementia networks. In Medical Imaging 2018: Biomedical Applications in Molecular, Structural, and Functional Imaging (Vol. 10578, p. 1057829). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Ngo, D., Garcia, A., Castillo, E., Morales, D. P., Pinker-Domenig, K., ... & Meyer-Bäse, A. (2018, May). Multi-level analysis of spatio-temporal features in non-mass enhancing breast tumors. In Smart Biomedical and Physiological Sensor Technology XV (Vol. 10662, p. 106620H). International Society for Optics and Photonics.
- **Tahmassebi, A.**, Pinker-Domenig, K., Wengert, G., Helbich, T. H., Bago-Horvath, Z., Morris, E. A., & Meyer-Baese, A. (2018). Radiomics with MRI for early prediction of the response to neo-adjuvant chemotherapy in breast cancer patients. Insights into Imaging, Springer.
- **Tahmassebi, A.**, & Buldum, A. (2015, March). Fluid flow calculations of Graphene Composites. In APS March Meeting Abstracts.
- **Tahmassebi, A.**, Gandomi, A. H., McCann, I., Schulte, M. H., Schmaal, L., Goudriaan, A. E., & Meyer-Baese, A. (2017). fMRI smoking cessation classification using genetic programming. In Workshop on Data Science meets Optimization.
- Illan, I. A., **Tahmassebi, A.**, Ramirez, J., Gorriz, J. M., Foo, S. Y., Pinker-Domenig, K., & Mayer-Baese, A. (2018, May). Machine learning for accurate differentiation of benign and malignant breast tumors presenting as non-mass enhancement. In Computational Imaging III (Vol. 10669, p. 106690W). International Society for Optics and Photonics.
- McCann, I., **Tahmassebi, A.**, Foo, S. Y., Erlebacher, G., & Meyer-Baese, A. (2018, April). NewsAnalyticalToolkit: an online natural language processing platform to analyze news. In Next-Generation Analyst VI (Vol. 10653, p. 106530P). International Society for Optics and Photonics.
- Mohebbali, B., **Tahmassebi, A.**, Gandomi, A. H., Meyer-Baese, A., & Foo, S. Y. (2018, May). A scalable communication abstraction framework for internet of things applications using Raspberry Pi. In Disruptive Technologies in Information Sciences (Vol. 10652, p. 1065205). International Society for Optics and Photonics.
- Yazicioglu, Y., **Tahmassebi, A.**, Pinker-Domenig, K., & Meyer-Baese, A. (2018). Determining leader nodes in dementia networks. Insights into Imaging, Springer.
- Pinker-Domenig, K., **Tahmassebi, A.**, Wengert, G., Helbich, T. H., Bago-Horvath, Z., Morris, E. A., & Meyer-Baese, A. (2018). Magnetic resonance imaging of the breast and radiomics analysis for an improved early prediction of the response to neoadjuvant chemotherapy in breast cancer patients.
- Romero, F. J., Morales, D. P., Castillo, E., García, A., **Tahmassebi, A.**, & Meyer-Baese, A. (2017, May). Reconfigurable wearable to monitor physiological variables and movement. In Smart Biomedical and Physiological Sensor Technology XIV (Vol. 10216, p. 1021608). International Society for Optics and Photonics.

- Moradi Amani, A., Meyer-Baese, L., **Tahmassebi, A.**, & Pinker-Domenig, K. (2019). Determining the best leader nodes in Alzheimer networks. Insights into Imaging, Springer.
- Toral-Lopez, V., Criado, S., Romero, F. J., Morales, D. P., Castillo, E., García, A., **Tahmassebi, A.**, & Meyer-Baese, A. (2018, May). Wearable biosignal acquisition system for decision aid. In Smart Biomedical and Physiological Sensor Technology XV (Vol. 10662, p. 106620F). International Society for Optics and Photonics.

CONFERENCE PROCEEDINGS

- (2019). Big Data: Learning, Analytics, and Applications. In Proc. of SPIE Vol (Vol. 10989, pp. 1098901-1).
- (2018). Sensing for Agriculture and Food Quality and Safety X. In Proc. of SPIE Vol (Vol. 10665, pp. 1066501-1).
- (2018). Disruptive Technologies in Information Sciences. Information Sciences, 1065201, 8.
- (2018). Smart Biomedical and Physiological Sensor Technology XV. In Proc. of SPIE Vol (Vol. 10662, pp. 1066201-1).
- (2017). Smart Biomedical and Physiological Sensor Technology XIV. In Proc. of SPIE Vol (Vol. 10216, pp. 1021601-1).

AWARDS

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|------------|------|--|
| • August | 2019 | Cerner Corporation Q2 All Star Award |
| • April | 2018 | Florida State University Research & Creativity Award, Amount = \$1000 |
| • March | 2018 | ONR Gulf of Mexico Summer School Grant, Amount = \$2400 |
| • January | 2018 | Nominated for SPIE Medical Imaging Best Student Paper Award |
| • January | 2018 | Florida State University Congress of Graduate Students Travel Grant, Amount = \$200 |
| • January | 2018 | SPIE Travel Grant, Department of Scientific Computing, Amount = \$600 |
| • July | 2017 | Tutorial Volunteer MVP Award, [PEARC2017] |
| • July | 2017 | Florida State University Congress of Graduate Students Travel Grant, Amount = \$1400 |
| • June | 2017 | [PEARC2017] Travel Grant, Google, Amount = \$1400 |
| • April | 2017 | SPIE Travel Grant, Department of Scientific Computing, Amount = \$1200 |
| • April | 2017 | Florida State University Congress of Graduate Students Travel Grant, Amount = \$200 |
| • January | 2017 | PhD Candidacy Exam (Score : 95.1%), Department of Scientific Computing |
| • July | 2016 | Florida State University Congress of Graduate Students Travel Grant, Amount = \$200 |
| • July | 2016 | 1st Place in [XSEDE2016] Data Simulation & Modeling Contest |
| • June | 2016 | [XSEDE2016] Travel Grant, Texas Advanced Computing Center (TACC), Amount = \$3000 |
| • October | 2015 | Dean's Scholarship, Florida State University, Amount = \$1000 |
| • August | 2015 | Graduate Teaching Assistantship, Florida State University |
| • December | 2014 | Annual Outstanding MS Academic Achievement, The University of Akron, Amount = \$500 |
| • December | 2013 | Annual Outstanding MS Academic Achievement, The University of Akron, Amount = \$500 |
| • August | 2013 | Graduate Teaching Assistantship, The University of Akron |

SKILLS

Fluent:

Python • Spark • SQL • Scikit-Learn • Pandas • MLlib • TensorFlow • Keras • AWS

Experienced:

C/C++ • R • SAS • Fortran • MPI • OpenMP • CUDA • OpenACC • MATLAB • Hadoop • HTML

CERTIFICATIONS

2018	Advanced SQL for Data Scientists	License: 9EB75CADFCDF4297BBF41E89BE70DB
2018	Learning SQL Programming	License: 328A2E0E68F84AEE8142601459F900D2
2018	Linux Command Line	License: BAE1FAFC35964CF08DF99E1EC6519EC
2018	Apache Spark Essential Training	License: AX-eCJJ-IO4kqPsW9qq_CDkbgLvl
2018	Four Semesters of Computer Science in 5 Hours	License: ARfNGq4Nst4o2JfaxfyeD6DWaMzX
2018	Python for Data Science Tips, Tricks, & Techniques	License: AXt4gbz9bsM1bKfLB3UVtpHhWyMm
2018	Statistics Foundations: 1	License: AWmWedX96Hqqr8gcMt5UYvHgFScx
2018	Statistics Foundations: 2	License Ab63cjbN21FxlchWLQvabSyXH_ca
2018	Statistics Foundations: 3	License Adk4NpfQ23tQGFnaZ7WkV-YFpcfO
2016	SAS Certified Advanced Programmer for SAS 9	License: AP018225v9
2016	SAS Certified Base Programmer for SAS 9	License: BP060504v9
2016	The Data Scientist's Toolbox	License: ZW45KTLYBXK5

SOCIETIES

APS • SPIE • ACM • IEEE • Elsevier • Frontiers

EDITORIAL BOARD & PEER REVIEWS

- Journal of Neurocomputing, Elsevier
- European Journal of Radiology, Elsevier
- IEEE Congress of Evolutionary Computations (CEC)
- Magnetic Resonance in Medicine, Wiley
- International Journal of Data Science and Analysis
- Current Journal of Applied Science and Technology
- Asian Journal of Research in Computer Science
- Journal of Neural Computing and Applications (NCAA)
- International Journal of Mechatronics, Electrical & Computer Technology (IJMEC)