

# 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

### **CERNER CORPORATION** | DATA SCIENTIST

October 2018 – Present | Kansas City, MO

- Building predictive models using machine learning for health care at Cerner Intelligence Group.

### **PRECISION WELLNESS, 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.

### **FLORIDA STATE UNIVERSITY** | GRADUATE TEACHING ASSISTANT

August 2015 – May 2018 | Tallahassee, FL

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

### **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 – Present | 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**

- **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**

- **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.** (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.
- 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

- (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

- 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 • C/C++ • SAS • SQL • Spark • Scikit-Learn • Pandas • MLLib • TensorFlow • Keras • GP-Learn

### Experienced:

R • 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 Ab63cJgN21FxlchWLQvabSyXH_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

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