

*"Sail away from the safe harbor. Catch the trade winds in your sails.
Explore. Dream. Discover." - Mark Twain*

Work Experience

- 2018–present **Director in Product Development and Innovation**, MASTERCARD, St. Louis, MO.
utilizing AI, data science and machine learning, to prevent fraud, credit delinquency, deposit charge off.
- Predict real time deposit fraud in scale
 - Detect health care fraud and abuse
 - Collaborate among very talented group of scientists in AI, Machine learning and Fraud detection
- 2015–2018 **Sr. Data Scientist in Predictive Analytic**, MONSANTO RESEARCH CENTER, St. Louis, MO.
Researched and developed AI algorithms, combining techniques from supervised and unsupervised learning, discrete and continuous optimization, to enhance decision making of the product pipeline.
- lead analytic metrics dashboard team
 - Mentored new hires and interns
 - Collaborate across organizations and translate business problems to analytic models
 - Deployed of real-time analytic models in cloud
- 2013–2015 **Data Scientist in Predictive Analytic**, MONSANTO RESEARCH CENTER, St. Louis, MO.
Developed statistical models and machine learning algorithms to predict crops performance.
- Designed fast Reactive online analytical processing (OLAP) structure
 - Implemented the genetic gain metrics to measure decisions effectiveness
 - Utilized machine learning and deep neural networks to prioritize breeding pipeline
- 2011–2013 **Research Assistant in Statistical Modeling**, MICHIGAN STATE UNIVERSITY, East Lansing, MI.
Focused on the statistical learning, localization, and system identification, with applications to mobile robotic sensors which led to 9 publications in top journals and conferences.
- Implemented Gaussian Process (GP) and Gaussian Markov random field (GMRF) models
 - Developed novel Image classification and Visual SLAM based on GP model
 - Implemented different Machine Learning classification and regression solvers
 - Simulated stochastic phenomena using Markov chain Monte Carlo (MCMC) and importance sampling
- 2010–2011 **Research Assistant in Mobile Robotics Sensor Network**, MICHIGAN STATE UNIVERSITY, East Lansing, MI.
Developed autonomous aquatic robotic sensor networks.
- Utilized OpenWRT Linux for robotic purposes
 - Communicate with sensor networks using wireless modules XBee, Wi-Fi
 - Implemented the GPS/INS positioning systems
 - Solved Non-Convex optimization problem to improve energy efficiency of aquatic mobile robots
- 2005–2010 **Researcher in Mobile Robotics**, MECHATRONICS RESEARCH LABORATORY (ROBOTIC GROUP), Qazvin, Iran.
Utilized and implemented various sensor fusion and AI algorithms to estimate position and build a map from surrounding environment.
- Built 12 axis Inertial Navigation System using DSP processor
 - Implemented the Simultaneously Localization and Mapping (SLAM)
 - Captured data from different sensors such as 2D laser range finder, accelerometer, digital compass, gyroscope, thermal array, odometer

Relevant Skills

Programming R, Go, SQL ,JavaScript, HTML, Python, spark
Documentation Github, Markdown, L^AT_EX, Microsoft Office
Database Oracle, Postgres, hive, Firebase

Education

2010–2013 **Doctor of Philosophy in Mechanical Engineering**, *Michigan State University*, East Lansing, MI.

Thesis: "Spatio-temporal field prediction under localization uncertainty for mobile sensor networks"

2005–2007 **Master of Science in Electrical Engineering**, *Sharif University of Technology*, Tehran, Iran.

Thesis: "Inertial Navigation System Algorithms for Robotic Application"

2012 **Summer School in parallel Processing**, *Michigan State University (HPCC Center)*, East Lansing, MI.

Gained programming experience with CUDA computing platform and programming model

Teaching Experience:

2012 **System Control**, MICHIGAN STATE UNIVERSITY, East Lansing, MI.

2012 **Matlab Simulink**, MICHIGAN STATE UNIVERSITY, East Lansing, MI.

2007 **Linear Algebra**, SHARIF UNIVERSITY OF TECHNOLOGY, Tehran, Iran.

Selected Publication

Journal papers

2018 **Fully Bayesian Prediction Algorithms for Mobile Robotic Sensors under Uncertain Localization Using Gaussian Markov Random Fields**, M. Jadaliha, J. Jeong, Y. Xu, J. Choi, J. Kim, *Sensors*.

2013 **Environmental monitoring using autonomous aquatic robots: Sampling algorithms and experiments**, M. Jadaliha and J. Choi, *IEEE Transactions on Control Systems Technology*.

2013 **Gaussian process regression for sensor networks under localization uncertainty**, M. Jadaliha, Y. Xu, J. Choi, N. S. Johnson, and W. Li, *IEEE Transactions on Signal Processing*.

2013 **Bayesian Prediction Algorithms for Robotic Sensors with Uncertain Localization Using Gaussian Markov Random Fields**, M. Jadaliha, Y. Xu and J. Choi, *Robotics and Autonomous Systems*.

2012 **Adaptive control of multi-agent systems for finding peaks of uncertain static fields**, M. Jadaliha, J. Lee, and J. Choi, *Journal of Dynamic Systems, Measurement and Control*.

Conference Papers and technical reports

More than 20 papers and technical report are published and presented., *please refer to <https://scholar.google.com/citations?user=USWN1wgAAAAJ&hl=en> for more info.*