

# Zara Khoshmanesh

Senior Analytics Internship, Discover Financial Services, Riverwoods, IL

LinkedIn: <https://www.linkedin.com/in/zahra-khoshmanesh-02a9bb25/>

Email: [Zahra.khoshmanesh@gmail.com](mailto:Zahra.khoshmanesh@gmail.com) Cellphone: [5155986346](tel:5155986346)

## EXPERIENCE

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- 05/2020 – 08/2020 **Senior Analytics Internship** - Discover Financial Services, USA
- 01/2017 – Present **Graduate Research Assistant** – Iowa State University, Ames IA, USA
- 05/2019 – 08/2019 **Data Scientist Intern** – EMC Insurance Company, Des Moines, USA
- 01/2017 – 5/2018 **Graduate Teaching Assistant** – Iowa State University, Ames IA, USA

## EDUCATIONS

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- (2017-2021) Iowa State University - Doctor of Philosophy - PhD, Computer Science, 3.9/4
- (2017-2019) Iowa State University – Master of Science, Computer Science, 3.89/4
- (2018-2020) Iowa State University - PhD Minor, Statistics, Ames, IA USA, GPA 4/4

## PROJECTS

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- 6/2020 – 8/2020 **Develop fraud rules to detect and prevent fraud losses by \$70,000 PBT - Discover Financial Services**  
**Description:** Utilizing RStudio, Python, Knowledge Seeker, and SAS EMiner in cloud environment and developed fraud rules which can detect and prevent losses by \$70,000 annually
- 08/ 2019 -12/2019 **Rolling Horizon – Syngenta Company**  
**Description:** Each year breeders in Syngenta need to decide whether to advance a specific hybrid early, before observing all harvested locations. In this project, we developed and presented a real-time scenario detection method using Rank Correlation and Confidence Interval Width Correlation to help breeders to decide early in the harvesting season.
- 05/2019 - 07/2019 **Employee Turnover, EMC Ins. Company**  
**Description:** Built a classification model from scratch for predicting employee turnover. Obtaining high precision and recall score on very unbalanced dataset. Improved the precision/recall scores from 17% to 77% and balanced accuracy from 60% to 88%. Used R and Python extensively (more than 5000 lines of code)
- 07/2019 - 08/2019 **New Hire Survey Data, EMC Ins. Company**  
**Description:** Performed data procurement, data analysis for new hire survey data, developed interactive and monthly automatic updated dashboards in Power BI, reduced the analysis time by a factor of 10

- 02/2019 - 04/2019 **Sentiment Analyzer: Sentiment Analysis using R**  
**Description:** Developed a package in R from the scratch to do sentiment analysis on customer review data. Used NLP, bag of words, word embedding and machine learning algorithms to predict the sentiment of reviews.  
URL: <https://zahrakhoshmanesh.github.io/SentiAnalyzer/>  
Shiny App: <https://joeybudi.shinyapps.io/zahra/>

## CERTIFICATIONS

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- 07/2019 Master R for Data Science, Lynda
- 09/2018 Machine Learning A-Z™: Hands-On Python & R in Data Science, Udemy
- 08/2018 Natural Language Processing with Python: from zero to hero, Udemy
- 05/2018 Eighth Summer School on Formal Techniques, Menlo College, Atherton, CA
- 05/2017 Midwest Big Data Summer School, Iowa State University, Ames, IA

## SKILLS

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- R, Python, SQL, Knowledge Seeker, Snowflake, SAS Enterprise Miner, Machine Learning, Data Science, Data Structures and Algorithms, NLP, Power BI, Tableau, Excel

## AWARDS

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- 04/2020 Robert Stewart Early Research Recognition Award, Iowa State University
- 04/2019 Robert Stewart Early Research Recognition Award, Iowa State University
- 04/ 2019 Mario Gutierrez Award, Iowa State University

## COURSES

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Advanced Topics in Software Engineering, Advanced Design and Analysis of Algorithms, Principles of Artificial Intelligence, Advanced Topics in Computational Intelligence (NLP), Business Analytics Foundation, Special Topics (Advanced Analytics), Statistical Methods for Research Workers, Statistical Theory for Research Workers, Applied Statistical Computing, Data Technologies for Statistical Analysis

## PUBLICATIONS

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- "Feature similarity: A method to detect unwanted feature interactions earlier in software product lines." In International Conference on Similarity Search and Applications
- "Leveraging artifact trees to evolve and reuse safety cases." In 2019 IEEE/ACM 41st International Conference on Software Engineering (ICSE), pp. 1222-1233. IEEE, 2019.
- "Leveraging feature similarity for earlier detection of unwanted feature interactions in evolving software product lines." In International Conference on Similarity Search and Applications
- "The role of similarity in detecting feature interaction in software product lines." In 2018 IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW), pp. 286-292. IEEE, 2018.