

# Nesreen El-Rayes

Ph.D. Candidate in Business Data Science, Martin Tuchman School of Management, NJIT, NJ.

[nde4@njit.edu](mailto:nde4@njit.edu) | U.S. Citizen

**Website:** [www.nesreenelrayes.com](http://www.nesreenelrayes.com) | **LinkedIn:** <http://www.linkedin.com/in/nesreen-el-rayes-164aa821>

**Google Scholar:** <https://bit.ly/3ixH0uI>

## Summary

---

Ph.D. Candidate in Business Data Science, Martin Tuchman School of Management, NJIT. Successfully defended the proposal and expected to graduate by Spring 2024. Six Sigma Black Belt, Beta Gamma Sigma Member, M.S. in Business Analytics and M.S. in Management of Technology with 15 years of experience in areas spanning Process and Performance Management, Decision Support, TQM, Business Analytics, Innovation Support, Training, and Teaching.

## Experience

---

### **Kean University**

New Jersey, U.S.A.

*Lecturer II*

Jan. 2018 – May 2023

Teach undergraduate courses (Business Statistics MGS 2150, Managerial Decision Modelling MGS 3110, Foundation of Business Analytics MGS 3101, Management Information Systems MGS 3040, and Operations Management MGS 4010). Department coordinator for the School of Management and Marketing at Kean Ocean campus. Moreover, I coordinated the online international Egyptian Program (Kean - Ain Shams University - Ocean County College). Also, I am a member of the OER Taskforce and OER conference committee (The academic year 2021). In addition, I participate in Assessment-related activities under the course leader of Mgs 2150. Co-Adviser in Business Analytics Student Association (BASA). Member of the OER Committee and the Sustainability Committee. In addition to other non-teaching responsibilities.

### **South Central College**

North Mankato, Minnesota

*Assessments Coordinator*

Apr. 2017 – Sep 2017

Led the preparation and maintenance of the Systems Portfolio of the College and directed the development, documentation, and protocols associated with South Central's assessment efforts. Lead the operative efforts on design and evidence collection. Manage assessment planning, reporting, and document retention efforts by working with the Executive Director of Research and Institutional Effectiveness to develop and implement an institutional plan for student learning outcomes assessment. Provide technical assistance and leadership to the AQIP Action Teams and any individuals involved in the institutional and programmatic assessment.

### **University of Michigan**

Dearborn Campus, Michigan

*Research Assistant and Statistics Tutor*

Jan. 2016 – Aug 2016

Taught business statistics course to undergraduate and graduate students in business school. In addition, I developed a study on Mass Shootings in the U.S. to analyze and forecast the mass shooting pattern. The study focused on establishing root cause analysis, detecting causal patterns, and prescribing recommendations to reduce the probability of mass shooting incidents in the U.S. Moreover, I updated the case studies for a textbook for Business School. Textbook: "*Managerial Decision Modelling-Business Analytics with Spreadsheets.*"

Balakrishnan, N. R., Render, B., Stair, R. M., & Munson, C. L. (2017). Managerial decision modeling. In *Managerial Decision Modeling*. De Gruyter.

### **Modern Sciences and Arts University (MSA)**

Cairo, Egypt

*Lecturer Assistant*

Sep. 2012 – Sep. 2013

Instructor for three courses (Introduction to Information Technology, Programming Concepts, and Management Decision Support Systems) in the Business School.

### **360 Solutions**

Cairo, Egypt

Freelance Trainer for Time Management and Employees Engagement tracks

May. 2012 – Sep. 2012

### **Information Technology Industry Development Agency (ITIDA)/ Technology Innovation and Entrepreneurship (TIEC)**

Cairo, Egypt

*Projects Specialist*

Mar. 2010 – Jul. 2011

Participated in developing TIEC's strategy and supported SMEs to apply and participate in joint projects with E.U. (ITEA Initiative – FP7 – Future Internet). Analyzed the outcome of the different activities of the Innovation Support Department and set actions accordingly to develop the department. Organized quarterly Collaborative Innovation Network (CoIN) events.

**Cisco Account/Xceed Contact Center***Business Analyst*

Cairo, Egypt

Mar. 2009 – Nov. 2009

Analyzed and identified areas of improvement and implemented reengineering processes to optimize CISCO's performance in Xceed. In addition, I implemented the Six Sigma project to improve customer satisfaction and developed various cyclical reports for management executives highlighting the account's performance.

**Nile University***Research Assistant*

Cairo, Egypt

Nov. 2007 – Feb. 2009

Conducted research on the Competitiveness and the Economic Freedom of Middle East countries and presented the findings at two international conferences. In addition, I studied and analyzed the status of (ICT for Health, ICT for Independent Living & Inclusion) in SMEs in Egypt working in these fields, the results were reported through the Ministry of Communications to the European Project FP7 to foster and support the participation of Egyptian SMEs in the FP7 project.

**Egyptian Company for Networks (EGYNET)***Performance and Process Analyst*

Cairo, Egypt

Aug. 2005 – Oct. 2007

Supported the definition and implementation of corporate business performance structure and ensured continuous improvement in the dashboard's process design, implementation, and management. Analyzed and evaluated the performance of the different business units to the company's strategy. Participated in preparing the book of performance based on KPIs and corporate annual reports for senior/executive management. Participated in the deployment of Six Sigma and executed two projects to improve the billing and collection process and reduce ADSL Customers' Churn Rate (Line Termination).

**Education**

Ph.D. candidate in Business Data Science

NJIT

Expected Spring 2024

M.S. in Business Analytics (Dean's List; GPA: 3.94)

University of Michigan

2016

M.S. in Management of Technology (GPA 3.68)

Nile University, Cairo, Egypt

2009

B.S. in Computers and Information (Grade 83.5%)

Cairo University, Egypt

2005

**Membership**

Member of professional communities: Association of Information Systems (AIS), American Society for Quality (ASQ), Member of Decision Sciences Institute (DSI), Institute for Operations Research and the Management Sciences (INFORMS), and Production and Operations Management Society (POMS).

**Research****PUBLISHED JOURNAL ARTICLES**

1. **El-Rayes, N.**, Chang, A., & Shi, J. (2023). Plastic Management and Sustainability: A Data-Driven Study. *Sustainability*, 15(9), 7181.
2. Chang, A. J., **El-Rayes, N.**, & Shi, J. (2022). Blockchain Technology for Supply Chain Management: A Comprehensive Review. *FinTech*, 1(2), 191-205.
3. **El-Rayes, N.**, Fang, M., Smith, M., & Taylor, S. M. (2020). Predicting employee attrition using tree-based models. *International Journal of Organizational Analysis*.
4. Guo, Y. M., Klein, B. D., & **El-Rayes, N.** (2018). A big data perspective on the relationship between firearm laws and mass shootings: Data visualization approach. *American Journal of Information Technology*, 8(1), 2.

**UNDER REVIEW**

1. Abraham, T., Dao, V., & **El-Rayes, N.** (Submitted October 2023). Sustainability Information Systems – an expansive bibliometric and semi-systematic literature review. *Journal of Cleaner Production*.

**PUBLISHED BOOK CHAPTER**

1. **El-Rayes, N.**, Chang, A.J., & Shi, J. (2022). Circular Economy and Sustainable Development: A Necessary Nexus for a Sustainable Future. Book Series: Circular Economy and Sustainability. Springer International Publishing. (forthcoming).

**CONFERENCE PRESENTATIONS AND PROCEEDINGS**

1. **El-Rayes, N.**, Chang, J., & Shi, J. (2023, November). From Waste to Wealth: A future paradigm for Plastic Management using Blockchain Technology. DSI Annual Meeting 2023. Atlanta, Georgia, forthcoming 2023.
2. **El-Rayes, N.**, Chang, J., & Shi, J. (2023, October). Unlocking Blockchain Technology for Sustaining Plastic Recycling. INFORMS Annual Meeting 2023. Phoenix, Arizona, 2023.
3. **El-Rayes, N.**, Chang, J., & Shi, J. (2023, May). Crisis of Plastic: Business Implications from Data Analytics. POMS Annual Meeting 2023. Orlando, Florida, 2023.
4. **El-Rayes, N.**, Chang, J., & Shi, J. (2023, April). **Poster**- From Waste to Wealth: A Future Paradigm for Plastic Management Using Blockchain Technology. INFORMS Analytics 2023. Aurora, Colorado, 2023.
5. **El-Rayes, N.**, Chang, J., & Shi, J. (2023, March). Blockchain Technology for the Plastic Crisis: A Mathematical Model for Sustainable Plastic Management. NEDSI 2023. Washington D.C., 2023.
6. **El-Rayes, N.**, & Shi, J. (2022, November). A Paradigm Shift for Addressing the Plastic Crisis: A Data-Driven Study. DSI Annual Meeting 2022. Houston, Texas, 2022.
7. **El-Rayes, N.**, Abraham, T., & Dao, V. T. (2022). Bibliometric Analysis of Sustainability Information Systems Research. AMCIS 2022. Minneapolis, Minnesota.
8. **El-Rayes, N.**, & Shi, J. (2022, April). Plastic Crisis: A Business Data-Driven Study on the Evolution of its Practice and Research. NEDSI 2022. Newark, New Jersey.
9. **El-Rayes, N.**, & Shi, J. (2021, October). Crisis of Plastic: Business Implications from Data Analytics. INFORMS Annual Meeting 2021. Anaheim, California. **Chair of one of the Analytics sessions on October 27.**
10. Bharati, R., **El-Rayes N.** (2021, May). *Sentiment analysis of Twitter feed for hashtags related to remote working. WID (Women in Data Science)*. Virtual: Stanford University and IBM-NY. (Invited to present) More than 1300 views. <https://video.ibm.com/channel/A2NL37BMs3G>
11. **El-Rayes, N.**, & Shi, J. (2021, April) Closing the Loop: Data Analytics for the Crisis of Plastic. Dana Knox Research Showcase.
12. **El-Rayes, N.**, & Rhee, S. (2021, March). An Alternative Approach for Diversity Training based on Visualization analysis on Social Media Data. In Proceedings of Northeast Decision Sciences Institute (NEDSI) Annual Conference Proceedings.
13. Kocoglu, I., Rhee, S., & **El-Rayes, N.** (2021, March). Opening Paths to Student Satisfaction and Success: Can Open Educational Resources Help? Kean University's OER Conference.
14. Rhee, S., Salaman, B., & **El-Rayes, N.** (2020, February). Diversity training: Is it a goal-oriented action or just a business? Southeast Decision Sciences Institute (SEDSI) Conference.
15. Taylor, S., **El-Rayes, N.**, & Smith, M. (2020, January). An Explicative and Predictive Study of Employee Attrition Using Tree-based Models. In Proceedings of the 53rd Hawaii International Conference on System Sciences.
16. El-Rayes, N., & Khalil, T. (2009). Competitiveness of I.T. in the Middle East. In Proceedings of IAMOT Annual International Conference, Orlando, Florida.
17. El-Rayes, N., & Khalil, T. (2008). Degree of Economic Freedom in the Middle East. In Proceedings of IAMOT Annual International Conference, Dubai, UAE.

**WORK IN PROGRESS**

The doctoral thesis, titled “**Plastic Crisis and Sustainability: Management From the Perspective of Business Data Science and Technology.**” is structured around three main components, delving into descriptive, predictive, and prescriptive analytics on plastic management. The findings and results of the first two components were published, with aspirations to submit the prescriptive analysis part to either POMS or DSJ by spring 2024 upon its completion.

Review and Other Activities

---

- Reviewer for DSI Annual Conference (2023)
- Reviewer for Sustainability Journal (2021-2023)
- Reviewer for Mathematics Journal (2022)
- Reviewer for JPIM Research Forum (2021, June). Track: (Organization, Strategy, People, and Innovation Processes)
- Reviewer for South Asian Journal of Business Studies (2020 - 2021)
- Reviewer for Data Science and Management Journal (2021)
- Participated in developing the strategy of TIEC (Technology Innovation and Entrepreneurship Center [www.tiec.gov.eg]).
- Represented the Egyptian ICT Community at the European Future Internet Symposium in Brussels in July 2010.

Certifications and Training

---

- **Certifications:** 6 Sigma Black Belt (ASQ-2010), 6 Sigma Green Belt (ASQ-2007), R Programming (Coursera-2016), Hadoop 101 (IBM- 2017), IBM Watson (IBM, 2017), Data Visualization with R (IBM, 2017). Matlab (MathWorks, 2023), Simulink (MathWorks, 2023), State flow (MathWorks, 2023), Optimization (Mathworks,2023).
- **Training:** Train the Trainer (360 Solutions), Intellectual Property Capabilities Development (IBM), Organizational Learning (Peter Senge). **Tools:** Decision Sciences & Analytics (Gurobi Optimization, Tableau Desktop, SPSS, MINITAB), SDLC (M.S. Visio, Use Case, Activity Diagrams), Data (ERD, DFD, SQL, Access, Qualtrics), Process (PERT/CPM, Gantt), Decision Tools (CorVu, Palisade (@Risk7 and Precision Tree7)), SharePoint, WIDS (Worldwide Instructional Design System), D2L Bright space.

Awards / Nominations

---

- Best Paper Nomination, under “Operations and Finance Track,” DSI 2023.
- Top 25% of the papers submitted to AMCIS 2022:  
El-Rayes, N., Abraham, T., & Dao, V. T. (2022). Bibliometric Analysis of Sustainability Information Systems Research. AMCIS 2022. Minneapolis, Minnesota.
- Outstanding Reviewer (SIG Green) - AMCIS 2022  
<https://aisnet.org/news/614359/AMCIS-2022-Honors-Best-Paper-Winners.htm>
- Nominated by the College of Business and Public Management at Kean University for Kean’s President’s Teaching Excellence Award in 2021.

Teaching Specialities[Course evaluations between 2018 and 2023 are available upon request.]

---

**The overall evaluation score for each course ranges between 4.5 and 4.9 out of 5.**

- MGS 3101 Foundation of Business Analytics [Spring 21, Fall 21, Spring 22, Fall 22, Spring 2023].
- MGS 2150 Business Statistics [Spring 18, Summer 18, Fall 18, Spring 19, Summer 19, Fall 19, Spring 20, Summer 20, Fall 20, Spring 21, Summer 21, Fall 21, Spring 22, Summer 22, Fall 22, Spring 2023 ].
- MGS 4010 (changed to MGS 3100 in 2021) Operations Management [ Fall 18, Spring 19, Fall 19, Spring 20, Fall 20, Spring 21, Fall 21, Spring 22, Fall 22, Spring 2023].
- MGS 3110 Managerial Decision Modeling [Spring 18, Fall 18, Spring 19].
- Introduction to Information Technology [Fall 2012, Spring 2013].
- Programming Concepts [Fall 2012, Spring 2013].
- Management Decision Support Systems [Fall 2012, Spring 2013].

Teaching Interests

---

Statistics, Operations Management, Business Analytics, Business Dynamics, Supply Chain Management, Sustainability Management, Data Science for Business, Management Information Systems, Six Sigma, Quality Management, Project Management, and Technology Management.

Course Development Interests

---

Sustainable Supply Chain, Circular Economy, Business Dynamics, Industry 4.0 and Businesses, Environmental and Social Governance, Data Science for Business, Understanding Industry 4.0, and Sustainability Management.