Rudolph T. Bedeley, Ph.D.

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Professional Experience

Aug. 2017 – Present **Assistant Professor**, Operations and Information Management department, Isenberg School of Management, University of Massachusetts at Amherst

- *Research interest:* Business Intelligence/Analytics (BI/BA), Data Mining/Machine Learning, Healthcare IT, Decision Support Systems and Knowledge Management
- *Teaching interest:* Analytics & Business Intelligence, Database Design and Implementation, Business Programming/Computing, Business Processes and Information Systems (IS).

2014 – 2017 **Instructor/Teaching Fellow**, School of Business and Economics, The University of North Carolina at Greensboro,

Duties: Taught variety of Information Systems related courses (e.g. Analytics & Business Intelligence, Database Systems, Web Design, etc.) to undergraduate students, grade their homework assignment, and held office hours to provide extra tutoring support to students.

Teaching Assistant, The University of North Carolina at Greensboro, School of Business and Economics, Department of Information Systems, Operations, and Supply Chain Mgt.

Duties: I assisted Professor Ling Xhue in teaching and grading two undergraduate courses: ISM 110: Business Computing and ISM 280: Intro to Info Sys. & Bus. Processes and hold office hours to provide extra tutoring help to needed students.

2011 –2012: **Teaching/Graduate Assistant**, The University of Delaware, Newark, DE, Alfred Lerner School of Business and Economics, Department of Management Information Systems.

Duties: I managed students' semester projects, compiled review reports, and graded homework assignment for Dr. Clinton White. I also assisted students with XML programming.

2009 –2011: **Research Assistant**, The University of Delaware, Newark, DE, Department of Civil and Environmental Engineering

Duties: I worked with Dr. Earl E. Lee on a research project that resulted in redesigning an effective traffic signal timing and synchronization system. I also applied project management techniques to prudently manage and coordinate effective use of scarce resources which eventually yielded on-time and within budget delivery of the results.

2007 –2009: **Assistant Chief Information Officer**, Community Water and Sanitation Agency (CWSA), Koforidua, Ghana

Duties: I assisted in designing and managing corporate database and ensured its efficient operation. I applied data analytic tools (e.g. SAS, SPSS, R, Excel) to analyze huge corporate data set for managerial decision making. I also applied skills and knowledge in programming language (Python, Java, MatLab, VB) to solve business problems such as improving business operations, and/or processes performance.

Education

Ph.D.		**Business & Economics**. Bryan School of Business & Economics, The University of North Carolina at Greensboro, Greensboro, NC, August 2017.
	Major**:**	*Information Systems; Minor: Business Intelligence/Analytics*
	Dissertation:	"An Investigation of Analytics and Business Intelligence Applications in Improving Healthcare Organization Performance: A Mixed Methods Research"
	Advisor	**Lakshmi S. Iyer,** Ph.D., Professor and Director of Analytics and Data Science, Appalachian State University.

M.S.		**Business & Economics**. Alfred Lerner College of Business & Economics, The University of Delaware, Newark, DE, May 2013.
	Major**:**	*Information Systems & Technology Management (ISTM)*
	Selected coursework:	Database Design & Implementation (ACT804); Security & Control (MISY 850); Telecom & Networks (MISY 811); Intro to Prog. Bus. Apps; System Analysis & Implementation (ACCT 806)
	Projects:	Corporate Data Management and Analytics in SAS environment, Six Sigma Applications to Improving Business Processes, Project Management and Data Mining**,** Consumer Behavior Analysis and Forecasting using Web Analytic Tools.

M.C.E. (*Master of Civil Eng.*)		**Civil Engineering.** College of Engineering, The University of Delaware, Newark, DE, December 2010.
	Major**:**	*Transportation Engineering*
	Selected Coursework:	Advanced Data Analysis (CIEG 667); Risk Analysis (CIEG: 641), Decision Tools & Policy Analysis (MAST 663); Project Management (CIEG 865), Modeling Eng. Sys; Geographic Info Systems (GEOG 670); Resilience Engineering (CIEG 667), Regional Analysis Methods (CIEG 656); Urban Transport.
	Thesis:	"Formulation and Analysis of Pedestrian Safety Problems using Bayesian Networks"

B.S.		**Geodetic Engineering**. College of Engineering, Kwame Nkrumah University of Science & Technology, Kumasi, Ghana, May 2007.
	Selected coursework:	Mathematics (MATH 252); Statistics (MATH 353); Engineering Economics (CE 461); Engineering Survey (GE 271); Geographic Information Systems (GE 461); Database (GE 464); Introduction to Information Systems (SE 154); Accounting (CSM 157);
	Rsrch. proj.:	"Critical Analysis & Impact Evaluation of GPS Signal Tracking Interruptions"

Research

PAPERS

Refereed Journal Publication:
1. Ortiz, J., Young, A., Myers, M. D., **Bedeley, R. T.**, Carbaugh, D., Chughtai, H., Davidson, E., George, J., Gogan, J., Gordon, S., Grimshaw, E., Leidner, D. E., Pulver, M., & Wigdor, A. (2019). "Giving Voice to the Voiceless: The Use of Digital Technologies by Marginalized Groups," *Communications of the Association for Information Systems*, 45, pp-pp. https://doi.org/10.17705/1CAIS.04502

2. **Bedeley, R.T**, Ghoshal, T., Iyer, L.S. Bhadury, J. (2016). "Business Analytics Capabilities and Use: A Value Chain Perspective," *Journal of Computer Information Systems,* DOI: 10.1080/08874417.2016.1220238

3. **Bedeley, R.T.**, Attoh-Okine, N.O., Earl Lee (2013). "Modeling Pedestrian Crossing Behavior using Bayesian Network." *ICE Journal of Transport*, Vol. 166, Issue 5

4. **Bedeley, R.T**, Iyer, L.S., Mehta, N. (n.d.). "The Antecedence, Consequences, Strategic Alignment, And Mediating Role of Analytics And Business Intelligence Capability In Healthcare," *2nd round review in the Information Systems Research (ISR) Journal*.
5. **Bedeley, R.T.,** & Iyer, L.S. (n.d.). "Analytics and Business Intelligence Capability Impact on Healthcare Value Chain: A Case Study," *under review in the Information & Management (I&M) Journal*.

Peer-reviewed Book Chapter
1. Ghoshal, T., **Bedeley, R.T**, Iyer, L.S., & Bhadury, J. (2018). Business Analytics Capabilities and Use: A Value Chain Perspective, currently in prints in the Annals of Information Systems Special Issue on *Analytics and Data Science: Advances in Research and Pedagogy*, Springer, New York, NY.

Conference Proceedings:
1. Hao, H., and Bedeley, R.T. (2020). "Biases in Online Opinion Platforms: A Literature Review & Future Research Direction," Accepted to the 26th Americas Conference on Information Systems," A Virtual Conference, August 10-14.
2. Pratt, R., **Bedeley, R.**, and Atim, J. (2019). "Physician Burnout – A Literature Review of the Influence of Electronic Health Records (EHRs)," Accepted to the 2019 Informs Healthcare conference, Cambridge, Massachusetts, July 27-29.
3. Dissanayake, I., **Bedeley, R.T.**, and Iyer, L.S. (2018). "Doing Good Matters: The Role of Problem Context in Improving Programming Projects," Accepted to the 24th Americas Conference on Information Systems, New Orleans, LA.
4. **Bedeley, R.**, Iyer, L.S., Sills, S.J., Damera, D. (2017). "Quality of Life Explorer Prototype to Address Socio-economic Problems: A Design Science Approach," *Pre-ICIS SIGDSA Symposium*, Seoul, South Korea, 2017.
5. **Bedeley, R.T.,** Benbow, M., and Iyer, L.S. (2016). An Analytic-based Strategy for College Sports Ticket Sales and Management, Accepted to the 22nd Americas Conference on Information Systems, San Diego, CA.
6. **Bedeley, R.T**. and Nemati, H. (2016). "Understanding the Impact of Big Data Analytics Investments on IT Ambidexterity and Firm's Performance." Accepted to the 17th Conference on Global Information Technology Management Association, San Diego, CA, USA
7. Uppala, V., **Bedeley, R.T.**, and Wang, W. (2016). Managing the Implementation of Cloud-based Technologies: Role of Competing Organizational, Accepted to the 22nd Americas Conference on Information Systems, San Diego, California, USA.
8. Ghoshal, T., **Bedeley, R.**, Iyer, L.S. Bhadury, J. (2015). "Business Analytics Capabilities and Use: A Value Chain Perspective," *Pre ICIS Proceedings of the Business Analytics Congress*, Fort Worth, Texas 2015
9. **Bedeley, R.** and Iyer, L.S. (2015). "Toward a Theory of Assistive Information Technology Fit and Viability: ADHD and Learning Environment as Context," *Post-ICIS Proceedings of the Special Interest Group in Social Inclusion Workshop,* Fort Worth, Texas, 2015.
10. **Bedeley, R.** and Iyer, L. (2014). "Big Data Opportunities and Challenges: The Case of the Banking Industry", *Proceedings of the Southern Association for Information Systems Conference, Macon, GA, USA*
11. **Bedeley, R,** and Palvia, P. (2014). A Study of the Issues of E-Healthcare in Developing Countries: The Case of Ghana", *Twentieth Americas Conference on Information Systems, Savannah, 2014*
12. **Bedeley, R.,** and Nemati, H. (2014). "Big Data Analytics: A Key Capability for Competitive Advantage", *Twentieth Americas Conference on Information Systems, Savannah, 2014*
13. **Bedeley, R.,** and Palvia, P. (2014). "E-Health Implementation Barriers in Developing Countries: The Case of Ghana", *Global Information Technology Management Association (GITMA) 15th Annual World Conference*.

Research-in-Progress

1. **Bedeley, R.T.** and Iyer, L.S. (under development). Leveraging Publicly Available "Big Data" Sets To Garner Competitive Business Intelligence: An Exploratory Application," targeted to *Information Systems Journal*.
   ***Status and Description*:** This study is currently being conducted to be submitted to a business intelligence/analytic journal. The study basically explores how well-known and publicly available big data sets in public databases such as "Yelp" can be used to generate valuable business intelligence that enables small business to identify avenues for gaining competitive advantage.

1. **Bedeley, R.T.** and **Suthaharan, S. (under development). "Towards Understanding Social Network Use Preference: Application of Machine Learning Technique on Big Social Network Data," targeted to *Information & Management Journal*.
   ***Status and Description*:** This study was submitted to AMCS 2016 and we are currently revising the paper based on the helpful feedback that was received from the conference reviewers. The study basically applies machine learning technique (specifically *support vector machine*) to classify users of two social network (SN) technologies (Facebook and Twitter) into their respective use preference based on unique features and characteristics of each SN.

2. **Bedeley, R.T.** and Nemati, H. (under development). "How Big Data Analytics Investments and Strategic Emphasis Influence Firm's IT Ambidexterity and Performance: An Empirical Evidence," targeted to *MIS Quarterly*.
   ***Status and Description*:** This study aims to show how firms that invest in Big Data applications and/or strategically emphasize on its use with effective management practices end up with higher return on their investment (high profit) and market value. The study basically uses quantitative research methods to test the relationship between the proposed constructs in a research model using companies' publically available datasets.

3. **Bedeley, R.T.** and Nemati, H. (in review). "Understanding the Impact of Big Data Analytics Investments on IT Ambidexterity and Firm's Performance." Target: TBD
   ***Status and Description*:** In this study we developed an empirical model for understanding how Big Data Analytics (BDA) strategy and its related investments jointly influence firm's profitability. We use secondary data obtained through publically available databases of different companies to test the hypotheses developed based on theory.

4. **Bedeley, R.T.,** Wang, W., Upala, V., and Singh, R. (under development). "Analytics Best Practices in 3rd Party Logistic Company: Application of Strategic Alignment Model (SAM) and Capability Maturity Model (CMM) Perspectives," targeted to *MIS Quarterly Executive*.
   ***Status and Description*:** This study basically employees both SAM and CMM theoretical lenses to help a 3rd Party Logistic Company successfully and effectively implement its business intelligent and/or analytic systems. We basically look into the literature for the current and emerging industry best practices and help the company implement its systems by offering practical and achievable recommendations.

Courses taught

- Graduate Level:
  1. **Advanced Business Analytics (SCH-MGT 697AS)**; *Spring 2018, 2019, 2020*:
     I taught this course to both MBA and MSB&A students in the Isenberg School of Business at UMass-Amherst. This course covers topics in Advanced Business Analytics, including managerial data mining, text mining, and decision trees, and more advanced data retrieval and manipulation. Models from statistics and machine learning (e.g., regression, clustering, neural nets, classification, association rule modeling, etc.) were applied to real-world cases datasets. In this managerially focused course, students learned about when and how to use data mining and machine learning techniques and how to interpret output. Students also learned how to extract and

manipulate data using various Software and programming languages. Experiential exercises with data mining, text mining, and statistical analysis were assigned using technologies and statistical programming languages such as XLMiner, Tableau, R, and Python.

- Undergraduate Level:
    1. **Data Mining in Business (OIM 454)**; *Fall 2017, 2018 & 2019, Spring 2018 and 2019, & 2020*
       I taught this advanced course to all undergraduate Senior students in the Operations and Information Management (OIM) Department as well as all other Isenberg majors at UMass-Amherst. This course covers topics in Advanced Business Analytics, including managerial data mining, text mining, and decision trees, and more advanced data retrieval and manipulation. Models from statistics and machine learning (e.g., regression, clustering, neural nets, classification, association rule modeling, etc.) were applied to real-world datasets. In this managerially focused course, students learned about when and how to use data mining and machine learning techniques and how to interpret output. Students also learned how to extract and manipulate data using various Software and programming languages. Experiential exercises with data mining, text mining, and statistical analysis were assigned using technologies and statistical programming languages such as XLMiner, Tableau, R, and Python.

    2. **Database Systems (ISM 218)**; *Spring 2017*:
       I have taught database systems offered by the IS department to students at the undergraduate level at UNC-Greensboro. I taught this course in Spring 2017 to 40 students. The course basically introduces students to the design, build, and implement concepts and principles of database systems. Through hands-on exercises, students learned not only the design concepts but also technical aspects of database applications such as MySQL, Microsoft Access, Oracle DB and Mongo DB for Big Data.

    3. **Business Analytics (ISM 425);** *Fall 2016*:
       I taught the business analytics course offered by the IS department to undergraduate business major students at UNC-Greensboro. The course introduces students to theories and current practices in business analytics and explains how data-driven business analytic technologies can help in many important business applications. Basically, the course provides a comprehensive exploration of a variety of data analytics techniques (e.g. data mining, machine learning, predictive modeling, classification techniques, clustering, etc.) through hands-on exercises and applications. The software programs, tools and technologies used in this course are XLMiner Data Mining Add-in for Excel, Tableau for Data Visualization, and R.

    4. **Website Design & Development (ISM 116):**
       During my Ph.D. studies at UNC-Greensboro, I taught two different classes of students (60 in each class) how to develop personal and business websites using HTML and CSS. I also introduced students to additional development applications such as Adobe Dreamweaver, HTML5, Javascript and web programming with PHP. In addition to the technical skills, I also taught students visual design principles. I set high standards for students by engaging them with lots of lab projects and classroom lectures. Students eventually completed the course by developing two large projects: 1) individual project and 2) group project. Students ended up creating amazingly interesting varieties of websites which were presented by each group (2-3 members) for a grade.

5. **Business Processes and Information Technology (ISM 280)**:

    While at UNC-Greensboro, I taught the business processes and IT course offered by the IS department to undergraduate students. The course basically introduces major business functions, organizational structures, and how the use of IT helps facilitate organizational business processes. The course mainly focuses on how the use of technology can help improve business processes and enhance organizational performance. At the end of the course, students learned to analyze business operations, technology implementation in organizations, and how businesses are applying IT to remain competitive.

6. **Introduction to Programming Business Applications (MISY 225)**:

    While at UD, I taught a lab session of the business programming class that was mainly taught by Professor Harry Wang. The course offered an introduction to object-oriented programming and other related programming topics. During this course, students learned the basic concepts and applications of variables, arrays, conditionals, loops, etc. Through hands-on exercises and applications, students learned how to program by using Visual Basics and Visual Studio Programing Language.

Industry Experience

May 2016 – May 2017 **Intern - Business Intelligence and Analytics in Healthcare Informatics:** Moses Cone Memorial Hospital, Greensboro, NC

 Duties:

Worked with the hospital's Director of Meaningful Use to analyze large data set and predict the hospital's ability to meet the requirements for the Merit-based Incentive Payment System (MIPS) for Medicare reimbursement that Medicare Access and CHIP Reauthorization Act (MACRA) recently introduced as a criterion to improve quality of service and performance.

Involved with the implementation of Meaningful Use Stage 3 program in the hospital.

Feb 2016 – July 2017 **Website Editor/Program Designer,** TechSavvy by American Association of University Women (AAUW) UNCG Chapter, Greensboro, NC.

Duties:

Consistently updated TechSavvy website with current information to ensure that users of the site are always provided with the most current information that meet their needs.

Constantly monitor the website and guard against any suspicious intrusion.

Jan 2015 – Sep 2015 **Research Consultant for Business Analytics Best Practices** at Transplace, formerly M33 Integrated Solutions (Logistic Company), Greensboro, NC.

Duties:

Conducted a field research on business intelligence and analytics best practices and came up with actionable recommendations that was later implemented in the company to enable it efficiently optimize their processes and operations.

Nov. 2007–July 2008 **Database Administrative Assistant,** Community Water & Sanitation Agency, Koforidua, Ghana

Duties:

Assisted in the creation, operationalization, and maintenance of the company's database.

Computer Technology Skills/Proficiency

Big Data Analytics: Hadoop (HDFS), MapReduce, RHadoop, Mahout, Apache Pig, Hive, Flumes, NoSQL
Databases: Microsoft Access, SQL, NoSQL, Mongo DB
Query Language: Structural Query Language (SQL) hands-on experience
Web Design/Dev.:   Adobe Dreamweaver CS6, Cascading Style Sheet (CSS)
Operating Systems: Microsoft Windows 7/10/13, Mac os x, Linux Systems

Statistical Computing/Programming Skills/Proficiency

Stat. Software: R/RStudio, SAS, SAS Enterprise Miner, SPSS, MatLab, S-Plus, and Microsoft Office
                        Application (e.g. Excel),
Psychometrics &   Predictive Modeling, Structural Equation Modeling, Factor Analysis,
Statistics: Multivariate Analysis, Linear and Non Linear Regression, Hierarchical Linear Modeling,
                        Classification and Clustering, Categorical Variable Analysis, Qualitative Data Analysis
Programming: R, SAS, Visual Basic, Java, Python, MatLab, C++, and MapReduce

Service

1. Undergraduate Student Advisor, UMASS-Amherst, (Spring 2019 – till Present)
2. Search Committee Member, UMASS-Amherst, (Fall 2017, Spring 2018)
3. Honest Student Advisor, UMASS-Amherst, (Fall2017)
4. Committee Member, Special Interest Group on Decision Support and Analytics (SIGDSA), Fall 2018.
5. International Student Ambassador, University of North Carolina at Greensboro, (2013 – 2017)
6. Graduate Student Senator, University of North Carolina at Greensboro, (Jan. 2014 – 2016)

Research Grants

Summer Research Grant ($2,000):	May–Aug 2016, UNCG Graduate School
Summer Research Grant ($2,000):	May–Aug 2015, UNCG Graduate School
Summer Research Grant ($2,000):	May–Aug 2014, UNCG Graduate School

Awards and Honors

1. 2016–2017 outstanding Graduate Teaching Assistant in Bryan School of Business & Economics (Awarded in May 2017)
2. Best Student Research Paper Award recipient at the 2017 Southern Association of Information Systems conference held in St. Simons Island, Georgia, USA. (March 2017)
3. Outstanding incoming international student in the University of North Carolina at Greensboro, (Aug. 2013)
4. 2011–2012 outstanding Graduate Assistant in the Department of Management Information System at the University of Delaware, Newark, (Awarded in May 2012)

Academic Volunteer Services

Ad hoc Peer Reviewer (Journal)

International Journal of Big Data Intelligence (IJBDI)	1 Article
Electronic Commerce Research and Application (Elsevier)	1 Article

Ad hoc Peer Reviewer (Conferences and Workshops)
Americas Conference on Information Systems (AMCIS)

International Conference on Information Systems (ICIS)
Hawaii International Conference on System Science (HICSS)
Business Intelligence Congress (BIC)
Global Information Technology Management Association
World Conference (GITMA)
Southern Association of Information Systems (SAIS)
Graduate Student Association (GSA) UNCG
GSA Senator for the Information Systems Department,   2014 – 2016

Hobby

1. Reading
2. Computing
3. Exercising

Membership/Affiliation

1. Association of Information Systems (AIS)
2. Massachusetts Society of Professors (MSP)

Certification

1. AMCIS 2016 Doctorial Consortium Participant
2. IBM Explorer – **_Cloud Developer Bootcamp_**. This certificate was earned by completing a hands-on training at a workshop for Bluemix covering Big Data and Analytics, Internet of Things (IoT), Watson, Mobile or DevOps Services. I acquired fundamental knowledge and understanding of IBM Bluemix which offers me with the basic capabilities to build and deploy my own application.

Reference

Iyer, Lakshmi (Ph.D.)   Ling Xue (Ph.D.)
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Department of Information Systems & Supply   Department of Computer Information Systems
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