

University of Delaware
HOSP 890 – Hospitality Business Analytics Seminar

Instructor: Dr. Tim Webb
Office: 204 Raub Hall
Office Hours: TBD/Appointment

Email: twebb@udel.edu
Class Time: Thursday: 6:00pm – 9:00pm
Location: **Zoom**
Meeting ID: 943 5055 3464

Course Content

The course will review methodologies related to big data analytics, as well as introduce research utilizing these techniques within the hospitality literature. The main goal is to fundamentally synthesize the application of data analytics to the hospitality industry across a wide array of topics. The course structure will consist of lectures covering each of the methodologies along with instruction regarding how to apply them in statistical software. These lessons will be followed by seminar sessions reviewing research articles that apply these techniques. The course will build each students' knowledge regarding data analytics in hospitality, as well as identify literature gaps that may drive future research.

Course Objectives

- Discuss current research efforts in hospitality analytics
- Apply and identify a wide variety of advanced modeling techniques to solve research questions.
- Critique analytical solutions and identify areas for improvement
- Identify gaps in the hospitality literature that may be augmented with big data modeling

Course Structure

The majority of the course will be broken into two week sessions. The first week will focus on lectures regarding methodology related to big data analytics. The second week will consist of a seminar session with articles assigned for review. Link to our zoom meeting <https://udel.zoom.us/j/94350553464>

Methodology Lectures

Each course topic will begin with a presentation regarding a popular model type utilized in research/big data analytics. An overview of the model will be presented with a discussion of how the model works, along with particular use cases. Then we will review how to apply this model in SAS (or other software). A homework assignment will be provided on each model type to practice your skills in applying these techniques on real data.

Seminar Sessions

Students will be assigned a list of research articles to review for each seminar topic. Students are expected to thoroughly review the articles and construct a critical analysis of the paper's fundamental components: literature review, methodology and results to be discussed in each seminar session. In addition, each student will present an overview of **one** of the research articles provided on the reading list. The article should be presented as a standard research presentation including the following sections, see below:

Seminar Article Presentations

Introduction: What is the article about?

Literature Review: What are the theories used and what do we know?

Hypotheses: What do they test?

Data/Methodology: What approaches do they use?

Results: What do they find?

MORE IMPORTANTLY!!!!

At the end of each presentation you must critique the article, you can start by asking the following questions:

- 1.) Did you think that it was a good article?
- 2.) Does the article have significant implications? The So What Question...
- 3.) Was the methodology adequate?
- 4.) Do you have any concerns or limitations with what they presented?
- 5.) How could the article be improved?

Term Paper

Each student will submit a term paper with a research topic of interest related to the course material. Specifically the paper must include an introduction, literature review (with hypotheses), and methodology section with expected findings. Topics should be selected based on the student's interest and serve as a building block for their dissertation or future publications. The only content requirement is that the paper incorporates one of the methodologies we've covered throughout the semester. A brief discussion of your selected topic is due on 10/22. This will allow me to provide feedback and assistance. **The due date for the final term paper will be December 10th 2020.**

Final Exam

A final take-home exam will be assigned on December 10th 2020. You will have a full disposal of resources for the exam (open book, notes, laptops etc.). The exam will be research based consisting of written response questions testing your understanding of the course material. More details will be provided as the exam date approaches.

Technology

We will use SAS Studio as the primary software for the course. This system allows users to point and click for model creation while simultaneously generating the code to run the model. The programming language can assist in many data manipulation steps that are critical when working with big data. In addition, the software can run models on extremely large data sets very efficiently. You are free to run the models in the software of your choice as long as you answer the required questions (R, Python, SPSS, STATA).

Semester Schedule

Date	Topic	Assignments and Articles
9/3	Big Data Analytics	<p>Vidgen, R., Shaw, S. and Grant, D.B., 2017. Management challenges in creating value from business analytics. <i>European Journal of Operational Research</i>, 261(2), pp.626-639.</p> <p>Choi, T.M., Wallace, S.W. and Wang, Y., 2018. Big data analytics in operations management. <i>Production and Operations Management</i>, 27(10), pp.1868-1883.</p> <p>Khalilzadeh, J. and Tasci, A.D., 2017. Large sample size, significance level, and the effect size: Solutions to perils of using big data for academic research. <i>Tourism Management</i>, 62, pp.89-96.</p> <p>Buhalis, D. and Leung, R., 2018. Smart hospitality—Interconnectivity and interoperability towards an ecosystem. <i>International Journal of Hospitality Management</i>, 71, pp.41-50.</p> <p>Read the Blog: https://towardsdatascience.com/the-saddest-equation-in-data-science-e60e7819b63f</p>
9/10	Logistic Regression Modeling	<p>In Class Lecture</p> <p>Readings Assigned</p> <p>HW 1 – Logistic Regression</p>
9/17	Logistic Regression Seminar	<p>Ramos-Rodríguez, A.R., Medina-Garrido, J.A. and Ruiz-Navarro, J., 2012. Determinants of hotels and restaurants entrepreneurship: A study using GEM data. <i>International Journal of Hospitality Management</i>, 31(2), pp.579-587.</p> <p>Heo, C.Y. and Lee, S., 2011. Influences of consumer characteristics on fairness perceptions of revenue management pricing in the hotel industry. <i>International Journal of Hospitality Management</i>, 30(2), pp.243-251.</p> <p>Zhang, J.J. and Mao, Z., 2012. Image of all hotel scales on travel blogs: Its impact on customer loyalty. <i>Journal of Hospitality Marketing & Management</i>, 21(2), pp.113-131.</p> <p>Ariza-Montes, A., Arjona-Fuentes, J.M., Law, R. and Han, H., 2017. Incidence of workplace bullying among hospitality employees. <i>International Journal of Contemporary Hospitality Management</i>.</p>
9/24	Time Series Modeling	HW 1 Due

		<p>In Class Lecture</p> <p>Readings Assigned</p> <p>HW 2 – Time Series Modeling</p>
10/1	Time Series Seminar	<p>Chu, F.L., 2009. Forecasting tourism demand with ARMA-based methods. <i>Tourism Management</i>, 30(5), pp.740-751.</p> <p>Baldigara, T. and Mamula, M., 2015. Modelling international tourism demand using seasonal ARIMA models. <i>Tourism and hospitality management</i>, 21(1), pp.19-31.</p> <p>Pan, B. and Yang, Y., 2017. Forecasting destination weekly hotel occupancy with big data. <i>Journal of Travel Research</i>, 56(7), pp.957-970.</p> <p>Lee, M., Mu, X. and Zhang, Y., 2020. A MACHINE LEARNING APPROACH TO IMPROVING FORECASTING ACCURACY OF HOTEL DEMAND: A COMPARATIVE ANALYSIS OF NEURAL NETWORKS AND TRADITIONAL MODELS. <i>Issues in Information Systems</i>, 21(1).</p>
10/8	Decision Trees Modeling	<p>HW 2 Due</p> <p>In Class Lecture</p> <p>Readings Assigned</p> <p>HW 3 – Decision Trees</p>
10/15	Decision Trees Seminar	<p>Antonio, N., de Almeida, A. and Nunes, L., 2019. Big data in hotel revenue management: exploring cancellation drivers to gain insights into booking cancellation behavior. <i>Cornell Hospitality Quarterly</i>, 60(4), pp.298-319.</p> <p>Chattopadhyay, M. and Mitra, S.K., 2019. Do airbnb host listing attributes influence room pricing homogenously?. <i>International Journal of Hospitality Management</i>, 81, pp.54-64.</p> <p>Duchessi, P. and Lauría, E.J., 2013. Decision tree models for profiling ski resorts' promotional and advertising strategies and the impact on sales. <i>Expert Systems with Applications</i>, 40(15), pp.5822-5829.</p> <p>Sun, P., Cardenas, D.A. and Harrill, R., 2016. Chinese customers' evaluation of travel website quality: A decision-tree analysis. <i>Journal of Hospitality Marketing & Management</i>, 25(4), pp.476-497.</p>
10/22	Neural Networks Model Discussion	<p>HW 3 Due</p> <p>In Class Lecture</p> <p>Readings Assigned</p> <p>HW 4 – Neural Networks</p> <p>Submit 1 page write summary of your term paper topic</p>

10/29	Neural Networks Seminar Discussion	<p>Anders, U. and Korn, O., 1999. Model selection in neural networks. <i>Neural networks</i>, 12(2), pp.309-323.</p> <p>Karlik, B. and Olgac, A.V., 2011. Performance analysis of various activation functions in generalized MLP architectures of neural networks. <i>International Journal of Artificial Intelligence and Expert Systems</i>, 1(4), pp.111-122.</p> <p>Claveria, O., Monte, E. and Torra, S., 2015. A new forecasting approach for the hospitality industry. <i>International Journal of Contemporary Hospitality Management</i>.</p> <p>Lado-Sestayo, R. and Vivel-Búa, M., 2019. Hotel profitability: a multilayer neural network approach. <i>Journal of Hospitality and Tourism Technology</i>.</p> <p>Webb, T., Schwartz, Z., Xiang, Z. and Singal, M., 2020. Revenue management forecasting: The resiliency of advanced booking methods given dynamic booking windows. <i>International Journal of Hospitality Management</i>, 89, p.102590.</p>
11/5	Text Analysis Modeling	<p>HW 4 Due</p> <p>In Class Lecture</p> <p>Readings Assigned</p>
11/12	Text Analysis Seminar	<p>Xiang, Z., Du, Q., Ma, Y. and Fan, W., 2017. A comparative analysis of major online review platforms: Implications for social media analytics in hospitality and tourism. <i>Tourism Management</i>, 58, pp.51-65.</p> <p>Xiang, Z., Schwartz, Z., Gerdes Jr, J.H. and Uysal, M., 2015. What can big data and text analytics tell us about hotel guest experience and satisfaction?. <i>International Journal of Hospitality Management</i>, 44, pp.120-130.</p> <p>Lee, M., Lee, S.A. and Koh, Y., 2019. Multisensory experience for enhancing hotel guest experience. <i>International Journal of Contemporary Hospitality Management</i>.</p> <p>Zhao, Y., Xu, X. and Wang, M., 2019. Predicting overall customer satisfaction: Big data evidence from hotel online textual reviews. <i>International Journal of Hospitality Management</i>, 76, pp.111-121.</p> <p>Anderson, C.K., 2012. The impact of social media on lodging performance.</p>
11/19	Conjoint Analysis Modeling	<p>In Class Lecture</p> <p>Readings Assigned</p>
11/26	Thanksgiving Break	

12/3	Conjoint Analysis Seminar	<p>Wind, J., Green, P.E., Shifflet, D. and Scarbrough, M., 1989. Courtyard by Marriott: Designing a hotel facility with consumer-based marketing models. <i>Interfaces</i>, 19(1), pp.25-47.</p> <p>Lee, S.H., 2016. How hotel managers decide to discount room rates: A conjoint analysis. <i>International Journal of Hospitality Management</i>, 52, pp.68-77.</p> <p>Hu, C. and Hiemstra, S.J., 1996. Hybrid conjoint analysis as a research technique to measure meeting planners' preferences in hotel selection. <i>Journal of Travel Research</i>, 35(2), pp.62-69.</p> <p>Denizci Guillet, B., Guo, Y. and Law, R., 2015. Segmenting hotel customers based on rate fences through conjoint and cluster analysis. <i>Journal of Travel & Tourism Marketing</i>, 32(7), pp.835-851.</p> <p>van der Rest, J.P.I., Cordella, P., Loosschilder, G. and Schwartz, Z., 2016. Connecting search marketing to hotel revenue management: conjoint analysis as a methodology to evaluate the optimal online travel agency commission fee. <i>Service Science</i>, 8(2), pp.169-183.</p>
12/10		Paper Topic Presentations, Paper Due, Exam Assigned

Note: Schedule may change during the semester, all students will be given a sufficient notice of two weeks prior to any changes.

University Policies

Academic Integrity

Please familiarize yourself with UD policies regarding academic dishonesty. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an assignment, to re-submit the same assignment for different classes, or to allow or assist another to commit these acts corrupts the educational process. Students are expected to do their own work and neither give nor receive unauthorized assistance. Complete details of the university's academic integrity policies and procedures can be found at sites.udel.edu/studentconduct/sgup/. Office of Student Conduct, 218 Hulliher Hall, (302) 831-2117. E-mail: student-conduct@udel.edu

Attendance

Absences on religious holidays listed in university calendars is recognized as an excused absence. Nevertheless, students are urged to remind the instructor of their intention to be absent on a particular upcoming holiday. Absences on religious holidays not listed in university calendars, as well as absences due to athletic participation or other extracurricular activities in which students are official representatives of the university, shall be recognized as excused absences when the student informs the instructor in writing during the first two weeks of the semester of these planned absences for the semester.

Harassment and Discrimination

The University of Delaware works to promote an academic and work environment that is free from all forms of discrimination, including harassment. As a member of the community, your rights, resource and responsibilities are reflected in the non-discrimination and sexual misconduct policies. Please familiarize yourself with these policies at www.udel.edu/oei. You can report any concerns to the University's Office of Equity & Inclusion, at 305 Hulliher Hall, (302) 831-8063 or you can report anonymously through UD Police (302) 831-2222 or the EthicsPoint Compliance Hotline at www1.udel.edu/compliance. You can also report any violation of UD policy on harassment, discrimination, or abuse of any person at this site: sites.udel.edu/sexualmisconduct/how-to-report/

Faculty Statement on Disclosures of Instances of Sexual Misconduct

If, at any time during this course, I happen to be made aware that a student may have been the victim of sexual misconduct (including sexual harassment, sexual violence, domestic/dating violence, or stalking), I am obligated by federal law to inform the university's Title IX Coordinator. The university needs to know information about such incidents to, not only offer resources, but to ensure a safe campus environment. The Title IX Coordinator will decide if the incident should be examined further. If such a situation is disclosed to me in class, in a paper assignment, or in office hours, I promise to protect your privacy--I will not disclose the incident to anyone but the Title IX Coordinator.

Accommodations for Students with Disabilities

Any student who thinks he/she may need an accommodation based on a disability should contact the Office of Disability Support Services (DSS) office as soon as possible. Students who have documentation of their need for accommodation should register via the SAM platform: andes.accessiblelearning.com/UDEL/. Reach DSS in the following ways: Phone: 302-831-4643, fax: 302-831-3261, [DSS website](#). Email: dssoffice@udel.edu or visit at 240 Academy Street, Alison Hall Suite 130. Note: During Covid-19 response call ahead to schedule an appointment to come to office

Non-Discrimination

The University of Delaware does not discriminate against any person on the basis of race, color, national origin, sex, gender identity or expression, sexual orientation, genetic information, marital status, disability, religion, age, veteran status or any other characteristic protected by applicable law in its employment, educational programs and activities, admissions policies, and scholarship and loan programs as required by Title IX of the Educational Amendments of 1972, the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, Title VII of the Civil Rights Act of 1964, and other applicable statutes and University policies. The University of Delaware also prohibits unlawful harassment including sexual harassment and sexual violence.

For inquiries or complaints related to non-discrimination policies, please contact: Office of Equity & Inclusion- oei@udel.edu, 305 Hullihen Hall Newark, DE 19716 (302) 831-8063