DSO599 – Text Analytics & Natural Language Processing Project Brief

Increasing Conversions in a National Admissions Center			
Sponsoring Company:	American Addiction Centers	**Contact Person:**	Ruchi Dhami Director, Brand & Design 440-223-1203 ruchi@rehabs.com
Project Background	American Addiction Centers (NYSE: AAC) is a leading provider of inpatient and outpatient substance abuse treatment services. We treat clients who are struggling with drug addiction, alcohol addiction, and co-occurring mental/behavioral health issues. We currently operate substance abuse treatment facilities located throughout the United States. These facilities are focused on delivering effective clinical care and treatment solutions. In addition to our 30+ treatment centers, AAC owns and operates a portfolio of digital properties and directories which provide information and educational resources to those seeking addiction treatment. AAC receives a large volume of inbound leads from our corporate, facility, directory, and library websites and other digital and social platforms. These leads are received by our Nashville-based admissions team in the form of calls, emails, texts, and online form fills. Unique callers convert to admissions in one of our treatment centers at about **1.2%.** AAC is looking to increase conversions by better addressing our audience's needs, understanding our callers, and improving our call handling practices using market research data to help more people receive the treatment they need for their addictions.		
Questions of Particular Interest (in order of importance)	- What can a sentiment analysis of inbound calls reveal regarding the creation of caller personas and successful lead warming tactics? - Are there words or phrases that callers seem to be influenced by, empathize with, triggered by, or that cause conversion or drop-off? - Regarding SMS leads, can we optimize these conversations by identifying indicators of the lead quality level?		
Project Goals	- Deployable strategies which increase AAC's conversion rate by **0.5**% - Reduce drop off **by 20%**		
Available Research	- SMS transcripts in SalesForce that match the appropriate "lead records" and "case records" - All Admissions Center calls have been recorded for QA, however the leads are not matched with the appropriate "lead records" and "case records"		

Final Deliverables:

- **6-minute presentation to client with formal business recommendations, implementation guide, and research methodology (for client)**
- **Packaged source code (in the form of a private Git repository or .zip file), for instructor**
- **3-page technical lab report detailing implementation and findings**

University of Southern California, Marshall School of Business

DSO-599 AAC Project Rubric

Section	Criterion	Below Expectations	Meets Expectations	Exceeds Expectations	Score
Final Presentation (Week 8) **30 points**	**Content is delivered in a logical, ordered manner that tells a coherent story**	*Content starts, transitions, and ends abruptly, with no apparent introduction or context, and not all members are present. (0)*	*Audience is confused by certain portions of presentation. (5)*	*Discussion points and recommendations are properly contextualized and build off prior concepts. (10)*	10
	Content and delivery is suitable for business decision makers, but contains content	*Presentation has multiple slides / occurrences of technical concepts / jargon introduced with no context and is meant more for a software engineer than a business manager. (0)*	*Certain slides / concepts presented may require reworking or rephrasing to generate managerial buy-in. (5)*	*Content presented is accessible, logical, and clear for business managers. (10)*	10
	Presentation follows 6 min time limit, at least 3 meaningful questions are asked by team members, and all 5 Easter eggs are found	*At least two of the three conditions are not met. (0)*	*One of the three conditions is not met. (5)*	*All three conditions are met. (10)*	10
Business Domain Solutions **40 points**	**Recommendations address a concrete business / operational problem**	*Recommendations do not address any real-life relevant issues for clients (0)*	*Recommendation addresses a concrete business problem, but is unclear (10)*	*Recommendations provide a concrete solution to a business problem with implementation roadmap clearly articulated (20)*	20
	The Return on Investment of recommendation is appropriately quantified and communicated	*At least two of the following are missing / unclear: costs, risks, benefits, and implementation roadmap / timeline. (0)*	*Costs, risks, benefits, and implementation roadmap / timeline are provided but may not be logically sound or realistic. (10)*	*Quantified, logical projections for costs, risks, benefits, and roadmap / timeframe for implementation are provided. (20)*	20
Technical Implementation **30 points**	**Algorithms are selected/implemented properly, and produce accurate results**	*Wrong algorithm is selected AND implemented with substantial issues that compromise accuracy. Instructor is unable to reproduce team results. (0)*	*Correct algorithm is selected, but implementation contains small mistakes / does not handle edge cases, or simply reuses a 3rd party model w/ no modifications. (10)*	*Algorithm is correctly selected/implemented, and is modified to suit the particular use case. (20)*	20
	Solution is scalable for 5MB, 50MB, and 50GB text data	*No implementation is provided for handling larger-size data and is only performant on small flat file. (0)*	*Source code / guidelines are provided to handle larger text corpuses but contain flaws in implementation. (2.5)*	*Source code is provided to handle small and Big Data corpuses, using appropriate technologies (ie. AWS, GCP, Databricks) (5)*	5
	Solutions are well-documented, adhere to data science / engineering best practices	*No comments or documentation is provided. A data scientist / analyst continuing the project 6 months from now must invest significant time understanding what is happening. (0)*	*Source code contains inconsistent comments / documentation. (2.5)*	*A data scientist / analyst would be able to jump right into the project and continue working. (5)*	5
				TOTAL	100