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Engagement Time Machine



UVA

SCHOOL *of* DATA SCIENCE

The Team



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M.S. Data Science

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M.S. Data Science

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B.S. Commerce

Client and Project Background





- Customer data platform (CDP)
- Use that data to help publishers understand their customers and content
- Focus on educational publishers

Project Background

- Publishers need insight on clients
 - Want to maximize user retention
 - Want to know possible reviewers
- Utilize user “events” to create models
 - Pageviews
 - Citations
 - Scrolling

Goal: Create two models using user events to maximize user retention and suggest article reviewers

Project Timeline

	Fall	Winter	Spring
Goals	<ul style="list-style-type: none">• Complete kickoff and onboarding• Gain subject matter expertise• Complete EDA 	<ul style="list-style-type: none">• Model design• Begin model buildout	<ul style="list-style-type: none">• Model refinement and testing• Prepare for deployment of models to clients
Critical Activities	<ul style="list-style-type: none">• Gain access to client data• Understand necessary analysis tools 	<ul style="list-style-type: none">• Implement RNN for retention model• Perform regression and clustering analysis for reviewer model	<ul style="list-style-type: none">• Validate model performance• Ensure models are malleable for specific clients

Data and Tools

The Modeling Data

- First-Party Customer Data
 - Significant user events and actions stored on the platform
 - User profile information

Data Access

- Cloud-based platforms
 - Data hosted on Snowflake
 - Python integration through Snowpark API
 - Machine Learning using AWS SageMaker



**Amazon
SageMaker**

Defining Success

Client Side

- User Retention Model
 - Identify users with high churn risk
 - Recommend ways to re-engage
- Reviewer Recommendations Model
 - Assess the qualifications of candidate reviewers
 - Provide suggestions to editors

Student Side

- Apply concepts from our coursework to a real-world problem domain
- Use teamwork skills to design and manage a project from start to finish
- Learn about a unique industry

Overarching Mission

Make human knowledge more interconnected and accessible



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