Comprehensive Case Study: AI-Powered Audience Targeting Strategy for NCCHR

Overview

This comprehensive case study covers two AI-driven initiatives developed to support the National Center for Civil and Human Rights (NCCHR) in boosting local visitor engagement and attendance.
The first section details a predictive model built to identify likely visitors based on digital engagement behavior.
The second explores a micro-targeted ad strategy using AI-generated copy tailored to ZIP-code–level personas across Metro Atlanta.

Part 1: Visit Prediction Model (Behavior-Based Segmentation)

Case Study: AI-Powered Visit Prediction Model for NCCHR (Using Simulated Data)

1. Executive Summary

This case study outlines the development of an AI-based model that predicts the likelihood of local students visiting the National Center for Civil and Human Rights (NCCHR) based on their online behavior.
Using simulated data that mirrors real engagement signals, the model identifies high-probability visitors and empowers NCCHR to execute targeted outreach with greater efficiency.

2. Problem Statement

NCCHR has set a goal to increase local visitor attendance by over 50,000 annually. However, many students remain passive despite awareness of the center.
The challenge was to build a predictive model that could distinguish between likely and unlikely visitors using only online behavior data—helping guide smarter marketing decisions.

3. Dataset and Variables

The dataset (simulated for privacy) included binary responses (0 or 1) to behavioral indicators such as:
- Visiting the NCCHR website
- Looking for discount codes
- Reading influencer content
- Asking friends/family
- Checking third-party reviews
- Using the NCCHR app

4. Machine Learning Approach

I used a Random Forest Classifier to train a binary classifier based on these behavioral features.
A synthetic "Visit" label was assigned to individuals with 2 or more engagement behaviors.
The model was trained on 80% of the data and validated on the remaining 20%.

5. Model Results

The model achieved a balanced prediction of likely and unlikely visitors. Top predictive behaviors included:

1. Looking for discount codes online
2. Asking friends or family members
3. Visiting the NCCHR website
4. Reading reviews and third-party information
5. Using the mobile app

Behaviors like reading influencer content and general research had moderate predictive power, while mobile app usage ranked lowest.

6. Actionable Insights

Based on the model's findings, NCCHR should consider the following actions:

🟢 Prioritize outreach to individuals who search for discounts—create limited-time student bundles or referral codes.

🟢 Target digital ads to users who have recently visited the NCCHR website.

🟡 Engage local influencers more strategically, as influencer content had moderate impact.

🟢 Build follow-up campaigns around students who engage with review sites and social proof channels.

🔴 Deprioritize reliance on mobile app usage as a signal of visit intent—it was the least predictive behavior.

7. Conclusion

This predictive model offers NCCHR a scalable and actionable tool to convert awareness into real attendance.
By focusing efforts on the most predictive behaviors, the organization can stretch its marketing budget while boosting meaningful engagement with local students.

Part 2: Micro-Targeted Ad Campaign by ZIP Code

Case Study: AI-Powered Micro-Targeted Ad Campaign for NCCHR

1. Executive Summary

This case study outlines a data-driven, AI-powered initiative developed to help the National Center for Civil and Human Rights (NCCHR) increase local attendance by targeting distinct community segments across Metro Atlanta.
By combining generative AI with persona mapping and ZIP-code targeting, I created custom ad campaigns tailored to audience values, interests, and language.

2. The Problem

NCCHR faces a common challenge for mission-driven organizations: while brand awareness exists, conversion to actual attendance—especially among local communities—remains low.
Generic advertising wasn't enough. The opportunity lay in personalizing outreach to resonate with diverse micro-communities across Atlanta.

3. Our Approach

I used artificial intelligence to generate localized, emotionally resonant ad campaigns by:
- Simulating ZIP-code personas using demographic and cultural trends
- Mapping each neighborhood to a tone, interest, and incentive
- Generating unique ad copy using GPT-style prompt logic
- Creating image prompt suggestions to guide visual creatives

4. Sample Persona Segments

📍 30303 – Downtown ATL

- Persona: Young Professionals

- Interest: Civil Rights History

- Ad Tone: Inspiring

- Suggested Offer: Free with Student ID

📍 30310 – West End

- Persona: Educators & BIPOC Families

- Interest: Social Justice & Education

- Ad Tone: Empowering

- Suggested Offer: Group Discounts for Teachers

📍 30314 – Ashview Heights

- Persona: Students & Activists

- Interest: Community Organizing

- Ad Tone: Mobilizing

- Suggested Offer: Youth Day Events

📍 30318 – Grove Park

- Persona: Working-Class Families

- Interest: Equity & Economic Mobility

- Ad Tone: Supportive

- Suggested Offer: Family Pack Tickets

📍 30316 – East Atlanta

- Persona: Young Artists & Creatives

- Interest: Creative Expression & Identity

- Ad Tone: Bold & Expressive

- Suggested Offer: Pay-What-You-Can Fridays

5. Project Outputs

The project generated:
- A ZIP-code persona matrix covering 5 neighborhoods
- Custom ad copy (headline, body, CTA) tailored to each persona
- GPT-style prompts to direct ad creative design
- An exportable campaign sheet for Meta/Facebook ad setup

6. Key Insights

💡 Personalization at the ZIP level creates emotional relevance and connection.

💡 Messaging tone should align with local values: 'Empowering' in West End, 'Bold' in East Atlanta.

💡 Offers like student discounts and pay-what-you-can nights resonate more when targeted precisely.

💡 Visual guidance helps creative teams scale quickly while staying on-brand.

7. Tools Used

- ChatGPT for ad generation and visual prompt scripting
- Python (Pandas) for persona and dataset modeling
- Microsoft Excel for campaign structure
- Meta (planned) for paid social execution

8. Conclusion

This campaign prototype demonstrates how nonprofit and mission-based institutions like NCCHR can use AI to scale storytelling, personalize outreach, and create deeper community resonance.
With a limited budget, micro-targeted AI campaigns provide a scalable path to conversion and community growth.