

Xinyue (Gina) Zhao

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Research Objective

My research focuses on leveraging advanced machine learning and statistical modeling techniques to quantitatively analyze how specific features of social media content influence consumer engagement and emotional responses. By integrating sentiment analysis and predictive analytics, I aim to develop data-driven models that optimize content strategies while maintaining ethical communication in the evolving digital landscape.

Education

Cornell University

Ithaca, NY

Master of Engineering in Engineering Management - Analytics Track

Aug. 2021 - Dec. 2022

- **Relevant Courses:** Machine Learning, Data Mining, Digital Marketing, Data-driven marketing, Customer Analysis and Strategy

University of Nottingham

Ningbo, China

Bachelor of Engineering in Mechanical Engineering

Sep. 2017 - May. 2021

- **Relevant Courses:** Probability and Statistics, Linear Algebra, Engineering Mechanics, Thermodynamics and Fluid, Control Engineering

Research Experience

Human-Likeness and the Uncanny Valley - Research Assistant

Sep. 2024 – Dec. 2024

- Processed 1,059 images and 237 videos scraped from Instagram Artificial Intelligence influencers to study the Uncanny Valley effect in virtual faces; labeled and filtered images (face area >5%) using AWS Rekognition, yielding 180 high-quality images
- Extracted 4,432 screenshots from videos using FFmpeg in Python; applied pHash for deduplication, reducing to 120 unique video images; combined these with 180 images from pure images to create a balanced dataset of 300 AI influencer face images
- Designed and implemented a Qualtrics survey to assess human-likeness, realism, and eeriness, collecting ratings from 150 participants, resulting in a structured dataset of 3,000 data points for quantitative analysis of user perceptions

Analysis of Adolescent Suicide Rates at the County Level - Research Assistant

May. 2024 - Present

- Integrated a decade (2013–2022) of data from CDC Wonder (using ICD-10 codes), CCD (Common Core of Data), and County Health Rankings & Roadmaps by linking FIPS codes, compiling 54 county-level features to predict suicide rates in Python
- Implemented multi-class classification with data standardization to forecast adolescent suicide risk (low, moderate, high), using SMOTE to improve model balance and enhance predictive performance
- Selected LightGBM as the optimal model (weighted F1-score: 0.987, AUROC: 0.994) and leveraged SHAP values to identify 20 critical variables across demographic and socioeconomic themes within three risk classes
- Developed county-level Suicide Vulnerability Indexes (SVIs) based on 20 variables across different classes, visualized with Plotly for targeted insights; the SVIs enable data-driven resource allocation and strategic interventions, supporting youth mental health initiatives

Customer Behavior Lab - Research Volunteer

Mar. 2024 – Jun. 2024

- Leveraged Hugging Face transformers in Python to perform advanced sentiment analysis on SPSS data collected from questionnaires, identifying key sentiments; developed Python scripts to map geographic coordinates to county-level data
- Conducted A/B tests on Facebook to quantify marketing effectiveness and presented data insights for the professor's review
- Investigated the impact of abstract vs. concrete thinking on customer behaviors and emotional responses; collaborated with the professor to refine research directions in marketing strategies
- Analyzed literature on clean energy marketing strategies, and government policies, summarizing key research gaps for further study

Predicting the Valuation of Unicorn Startups - Data Scientist

Mar. 2022 - May. 2022

- Applied ML models (KNN, Decision Tree, SVM, Logistic Regression) in R to predict startup valuation, used boosting in random forest to obtain an accuracy of 76.77% (highest across all attempts)
- Created ETL pipelines to clean and analyze unicorn startups' valuation datasets in Python and SQL; composed the data analysis and research result into actionable business suggestions to the company leaders for maintaining and improving startups' valuations

Data-Driven Customer Segmentation for Hotel Marketing Strategy - Data Scientist

Oct. 2021 - Dec. 2021

- Employed Principal Component Analysis (PCA) to distill key factors, and facilitated the segmentation of 79,326 hotel customers into six distinct groups for more precise marketing strategies
- Implemented K-Means clustering in R to identify high-value customer segments, enhancing the effectiveness of marketing campaigns
- Revealed booking patterns through Exploratory Data Analysis, leading to successful adjustments in off-peak promotional campaigns
- Developed actionable, data-driven recommendations for hotel management, and increased revenue from targeted customer segments

Analysis of PM2.5 and PM10 Index of Air Pollution Particles in Ningbo Metro - Data Analyst

Jun. 2018 - May. 2020

- **Co-authored a paper with the professor and published it at the international conference - ISNMHMT2020.**
- Led a 4-member team to measure the concentration of PM2.5 & PM10 in various periods at 13 stations in Ningbo Metro for a month; cleaned and analyzed collected data and used Tableau for visualization
- Explored causes of air pollution in subway stations to help improve air quality and subway-taking experience; summarized research results and actionable suggestions into the paper

Skills and Expertise

Programming Skills: Python (NumPy, Pandas, Matplotlib, sci-kit-learn, etc.), SQL, R, MATLAB
Software Skills: SPSS, Tableau, Power BI, MS Office (Excel, PowerPoint, Word), Adobe Premiere, SolidWorks
Marketing Tools and Strategies: Google Analytics, SEO, SEM, Email Marketing, CRM, Social Media Marketing, Canva

Work Experience

Think Academy International Education Inc.

San Jose, CA

Future Leadership Program - Marketing

Mar. 2023 - May. 2025

- Led social media campaigns with 20 Key Opinion Leaders, generating \$30,000 in profit; optimized ad performance, increasing CTR by 3% and conversions by 1.5x; grew social media followers by 3,000 and generated 300 leads through inbound marketing in 2 months
- Expanded marketing channels: drove field marketing efforts resulting in 50 leads, organized K12 school webinars securing 1,000 leads, and grew private domain traffic from 500 to 3,000 members
- Conducted market analysis using secondary data to inform strategic development plans, examining residents' demographics, including income levels and education attainment

JoinedPrice Technologies, Inc. | Soca (A Job-seeking Platform)

Redmond, WA (Remote)

Marketing Analyst Intern

Mar. 2023 - Mar. 2023

- Strategized SEO plan (keyword, content, on/off-page) elevating Soca's organic search rankings by 35 places
- Extracted 5K+ salary data points from 2 public websites using Python (Selenium, BeautifulSoup) for feature development
- Conducted statistical data analysis with SQL queries, consolidating multi-source information to aid job seekers in negotiation

Qianyan Technology (Foshan) Co., Ltd

Foshan, China (Remote)

Business Intelligence Analyst Intern

Mar. 2020 - May. 2020

- Conducted thorough industry research, compiling comprehensive business intelligence from 12 online & offline dialect education platforms and 10 dialect-related smart electronics
- Authored and presented 4 detailed industry analysis reports to senior executives, aiding informed decisions regarding market entry
- Performed competitive product analysis from 4 dimensions (customer base, product, profit model, and business model)
- Identified and reported 3 shortcomings of our product and proposed potential solutions to engineering

CNH Industrial

Shanghai, China

Purchasing Assistant

Jun. 2019 - Aug. 2019

- Investigated the casting industry and made a list of 50 potential vendors; created a list of criteria for vendor selection based on business requirements, narrowing the list down to around 20 vendors
- Introduced our company's basic information and product requirements to the selected vendors; assisted in establishing business relations with 3 overseas vendors and 5 local vendors
- Evaluated 10 current vendors' financial situation with their financial statements to ensure they have positive cash flows

Extra-Curricular Activity

Youth Volunteer Association - Lead of Technical Department

Oct. 2017 - May. 2018

- Planned a 300-participant charity party and participated in the promotion, theme planning, activity programming, and light directing
- Owned and operated its WeChat official account, designed posters, and edited videos with PS & Adobe Premiere to publicize activities