

# Nguyen (Nick) Nguyen

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## EDUCATION

University of Miami

Ph.D. Marketing, Expected 2025.

University of Miami

B.S Computer Science, minor Mathematics.

Magna Cum Laude, 2020.

## RESEARCH INTEREST

Methodological: Deep Learning, Machine Learning, Natural Language Processing, Audio Processing

Substantive: Ad Generation, Ad Testing, Ad Targeting, Email Marketing, Audio Advertising, Strategy

## PUBLICATION

Nguyen Nguyen, Joseph Johnson, and Michael Tsiros (2024). Unlimited Testing: Let's Test Your Emails with AI. *Marketing Science*, 43(2), 419–439. <https://doi.org/10.1287/mksc.2021.0126>

## WORKING PAPERS

Nguyen Nguyen, Joseph Johnson, and Johann Melzner (2024). “DeepAudio: An AI System to Complete the Pipeline of Generating, Selecting, and Targeting Audio Ads”

- **Job Market Paper**, under review
- App Link: <https://huggingface.co/spaces/DeepAudio/DeepAudio-App-Ver-3-1>

Nguyen Nguyen and Joseph Johnson (2022). “Automating Content Generation: The Case of Email Headlines.” [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4111592](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4111592)

Nguyen Nguyen, Joseph Johnson, Yudong Tao, Rui Ma, and Meiling Shyu (2023). “Deep Marketing: A Survey of The Rise of Deep Learning Applications in Marketing.”

## WORK IN PROGRESS

Abhi Bhattacharya and Nguyen Nguyen. “A Deep Learning Approach to Assessing Firm Strategy.”

Joseph Johnson and Nguyen Nguyen (proposed Spring 2026). Revolutionizing Marketing: How AI is Enhancing Marketing Profitability, Effectiveness and Efficiency. *Palgrave Macmillan Publisher*.

## AWARDS

AMA-Sheth 2023.

ISMS Doctoral Consortium Fellow 2022, 2023.

1st Place, Big Data Machine Learning Competition TracFone TracHack 2022, reward \$3,000.

## CERTIFICATIONS

Amazon AWS Deploy Machine Learning Pipelines

IBM Professional Certification Data Scientist

## SKILLS

Programming & AI Cloud Platforms: Python, PyTorch, Google Cloud, Databricks, Amazon AWS

Languages: Vietnamese (Native), Chinese (Intermediate)

## TEACHING EXPERIENCES

### Instructor:

MKT 301 – Marketing Foundations (undergraduate)

Spring 2025 (scheduled)

### Teaching Assistant:

MKT 687 – Deep Learning Applications in Marketing (PhD)

Spring 2025 (scheduled)

MKT 371 – Applications of AI in Marketing (undergraduate)

Fall 2024 (scheduled)

AIM 001 – AI and Analytics in Marketing (EMBA)

Summer 2024

MKT 677 – Strategic Digital Media Management (EMBA)

Fall 2023

BUS 658 – Business Analytics (EMBA)

Summer 2023

MKT 677 – Strategic Digital Media Management (EMBA)

Spring 2023

BUS 658 – Business Analytics (EMBA)

Summer 2022

### Developed AI Apps for University Courses (access available upon request):

| App Name                                | App Link  | App Output Samples   |
|---|---|----------------------|
| Text-to-Image Generation                | <a href="https://huggingface.co/spaces/UMiamiMarketing/UMiami-Text-to-Image-Generation-App">https://huggingface.co/spaces/UMiamiMarketing/UMiami-Text-to-Image-Generation-App</a> | <a href="#">Link</a> |
| Product Design                          | <a href="https://huggingface.co/spaces/UMiamiMarketing/Product-Design-App">https://huggingface.co/spaces/UMiamiMarketing/Product-Design-App</a>                                   | <a href="#">Link</a> |
| Product Shooting Background Replacement | <a href="https://huggingface.co/spaces/UMiamiMarketing/background-replacement">https://huggingface.co/spaces/UMiamiMarketing/background-replacement</a>                           | <a href="#">Link</a> |
| Survey Summarizer                       | <a href="https://huggingface.co/spaces/UMiamiMarketing/Survey-Summarizer-AI-App">https://huggingface.co/spaces/UMiamiMarketing/Survey-Summarizer-AI-App</a>                       | <a href="#">Link</a> |

## REFERENCES

### Joseph Johnson (Chair)

Associate Professor

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## Selected Abstracts

### **DeepAudio: An AI System to Complete the Pipeline of Generating, Selecting, and Targeting Audio Ads** (with Joseph Johnson and Johann Melzner)

Audio advertising is a large industry reporting a billing of \$14 billion in 2022 and reaching up to 86.8% of the U.S. population. Reflecting the importance of audio advertising, AI startups are offering marketers generative AI tools to efficiently create multiple audio ads. Also, ad targeting platforms like Spotify can deliver audio ads to targeted audiences. However, marketers currently lack an easy method to evaluate the effectiveness of their audio ads. A/B testing, a popular method to evaluate ad effectiveness suffers from biased results when conducted on ad targeting platforms. Moreover, A/B testing of audio ads on online audio platforms is not publicly available. Given this background, the authors propose DeepAudio, an AI system that leverages insights from decades of advertising effectiveness research with AI algorithms to diagnose the likeability of audio ads. Empirical validation of DeepAudio on a holdout set achieves F1-score of 0.77. In an external validation on radio ads from a major broadcaster, DeepAudio achieves 0.69 F1-score. By quickly assessing the effectiveness of multiple audio ads, DeepAudio enables marketers to select the most promising ad executions and fully harness the power of Generative AI. Thus, DeepAudio completes the modern pipeline of generating, selecting, and targeting audio ads.

### **Unlimited Testing: Let's Test Your Emails with AI** (with Joseph Johnson and Michael Tsirios)

Testing email marketing effectiveness is an active research area because email remains an important channel for customer acquisition and retention. Email open rates are a key measure of campaign effectiveness. Scholars identify three predictors of open rates: recipients' characteristics, headline characteristics, and sending time. The industry-favored A/B testing has three drawbacks: it takes hours, depletes lists available for main campaigns, and limits testable email versions because of sample size and power requirements. These limitations continue to motivate researchers to build and improve open rate prediction models. Although they reduce testing time, models developed in marketing use only recipients' past open rates as predictors. By contrast, models in computer science typically use only email headline characteristics as predictors. Consequently, current models' open rate prediction errors are high. The authors address the limitations of both literature streams and use all three predictors and machine learning to build an email open rate predictor (EMOP) based on their universal emotion detector (UED). They test EMOP on data from four brands and set state-of-the-art prediction results. Experimental validation shows that EMOP can pick the best headline from a set of professionally generated headlines. Also, UED ranked second at the SemEval 2018 Task 1 E-c competition as of January 5, 2023.

### **Automating Content Generation: The Case of Email Headlines** (with Joseph Johnson)

Marketers today need to manage multiple media, including television, radio, email, and social media. Thus, they need to keep coming up with content to build both brand awareness and develop customer relationship management. Among the multiple types of available media, email marketing has the highest return on investment and thus remains an important medium for marketers. A good email headline can significantly increase the conversion of an email campaign. Writing email headlines with high open rates can boost brand revenues by millions of dollars. A good email headline can take multiple days to create, and marketers' duties include writing headlines for multiple email campaigns each day. This level of creative throughput can overwhelm marketers. To provide marketers with a decision aid, the authors propose the Email Headline Generation System (EM-Gen-Sys), an AI system that automatically generates email headlines given input keywords. In addition to generating headlines, EM-Gen-Sys can predict headlines that recipients are highly likely to open, thereby improving the chances of boosting brand revenue. Moreover, the EM-Gen-Sys framework is extendable to the generation of Facebook, Instagram, and Twitter posts.

## **A Deep Learning Approach to Assessing Firm Strategy** (with Abhi Bhattacharya)

The strategy of a firm, assessed through various typologies such as Miles and Snow (1978) and Porter (1980) has traditionally been measured through surveys. As a result, most research in this area has been cross-sectional with strategic orientation being considered to be both static (i.e. invariable across time) and nonsynchronous (i.e. firms are not allowed to have a mix of strategies concurrently). In this research, we utilize Large Language Models to measure firm strategy over years using reported annual statements. We validate the measures and empirically show their superiority over existing approaches. We also establish the firm strategy to be essentially dynamic and differentially leveraged across firms depending on extant firm resources. Finally, we investigate their independent and contingent impact on various downstream consequences including product market performance metrics such as market share and stock market metrics such as Total Shareholder Return (TSR).

## **Deep Marketing: A Survey of The Rise of Deep Learning Applications in Marketing** (with Joseph Johnson, Yudong Tao, Rui Ma, and Meiling Shyu)

Siri, Maps, and Alexa are but a few of the many artificial intelligence (AI)-enabled products that people enjoy today. While several causes have aligned for the emergence of AI, a key enabling factor is the development of models based on deep learning (DL) algorithms. To assess the impact of DL models in marketing scholarship, the authors conduct a novel semi-automated five-step cross-disciplinary survey spanning outlets in marketing, computer science, information science, and electrical engineering. They find that the bulk of DL marketing research appears outside marketing outlets. Using text mining methods, they find that topics discussed in these papers fall into two main groups: product-market-related and customer-related. A detailed examination of 56 papers shows that 25 marketing sub-domains have DL applications. The authors conclude that DL improves upon current modeling techniques, combines with existing marketing models, addresses problems hitherto difficult to tackle, provides real-time analytics, and handles high-throughput data. Also, DL offers a unifying approach to several marketing research areas. Further, DL models can continuously learn and thereby reduce model errors over time. Like economics, psychology, sociology, probability, and statistics—which have enriched marketing in the past—computational sciences are now advancing marketing scholarship into a new paradigm.