**Researcher Profile**

I am an Assistant Professor of Marketing at Kenan-Flagler Business School of the University of North Carolina at Chapel Hill. My research and teaching are situated at the intersection of marketing and artificial intelligence. An extensive industry background in management consulting, digitalization, and entrepreneurship complements my Ph.D. in Marketing from Goethe University Frankfurt.

My research vision is to advance data-driven marketing through machine learning (ML) and artificial intelligence (AI). By integrating marketing theory with real-world applications, I aim to develop new frameworks and tools that not only contribute to academic discourse, but also provide tangible benefits to practitioners. My research is rooted in the firm belief that significant value emerges from collaborating with both industry partners and academic peers across different fields.

My research portfolio is characterized by methods and frameworks that utilize AI and ML to create insights into complex market dynamics and consumer behaviors from vast unstructured datasets. When no suitable method is available, I refine or develop new methods. For instance, I introduce in my 2023 *Journal of Marketing Research* article a novel ML framework called *M4* to discern and visualize the multifaceted roles products occupy in competitive market structures. Similarly, *EvoMap*, published in *Marketing Science* (2023),advances dimensionality reduction techniques to track and visualize the evolving relationships among firms over time, offering a dynamic view of competitive strategies.

My current research projects leverage and adapt AI methods to marketing applications. For instance, the project "*Creating Synthetic Experts with Generative Artificial Intelligence*" proposes a scalable and cost-effective approach to mimicking specific capabilities of proprietary generative AI models. Another example is the project "*The Market Basket Transformer: A New Foundation Model for Retail*". Here, we adapt the transformer architecture (known from large language models like GPT) to market basket data. We further develop solutions to mitigate the bias against newly launched, small-brand, and niche products that are rooted in transformers’ inherent need for vast training data that are typically unavailable for less frequently purchased products.

Collaboration with marketing practice and knowledge dissemination beyond academia is an important aspect of my work. The project "*In Search of Signals: Inferring Consumer Characteristics from Search Queries*," exemplifies my commitment to collaborating with industry partners. Utilizing large language models and dimensionality reduction, we significantly improve a retail bank’s ability to target specific audiences using search engine advertising. To make our work more accessible to the bank’s organization, we developed an interactive app that is now being used by various teams in the bank. Similarly, I strive to make my research broadly available through interactive apps (e.g., for M4 at [www.mapxp.app](http://www.mapxp.app)) and extensive resources for replication and application (e.g., [www.synthetic-experts.ai](http://www.synthetic-experts.ai)).

For the classroom, I pioneered an MBA course and an undergraduate course at the forefront of the evolving intersection between business and data science. Anticipating the increasing relevance of machine learning and AI in business, I was the first to integrate cloud computing, Python programming, advanced machine learning models, and generative AI into the classroom at Kenan-Flagler Business School. Both courses garner high demand from students; the MBA course won our prestigious Weatherspoon Award for Excellence in MBA Teaching in 2023 and [Poets & Quants](http://www.poetsandquants.com/2024/09/13/the-favorite-courses-of-mbas-2/2) recognizes it as an MBA favorite. The undergraduate course uniquely brings business and computer science majors together to solve contemporary business problems in interdisciplinary teams. I teach students how to interact with generative AI through APIs, build retrieval augmented generation (RAG) chatbots, and fine-tune transformer models on specific marketing tasks.

Several awards testify to the quality and relevance of my work, including UNC’s Junior Faculty Development Award, which recognizes my dedication to academic research. Additionally, industry awards such as the Retail Science Award from the EHI Retail Institute and the German Science Award from the German Marketing Association highlight the practical application of my work. I am regularly invited to share insights on machine learning and AI, for example, as a panelist at institutions like UNC, NC State, and Wharton. As an expert at the American Marketing Associations’ AI Special Interest Group (AMA AI SIG), I contribute content to the expert corner on transformer models in marketing. As the academic co-director for the Humphrey Fellowship Workshop on Generative AI at UNC’s School of Data Science and Society, I shape the discussion on AI’s role in business and society.