

MEENAKSHI BALAKRISHNA

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EDUCATION

Ph.D., Quantitative Marketing	Expected - 2025 (Flexible Joining Data)
University of California, San Diego, Rady School of Management Committee: Kanishka Misra (Chair), Kenneth C. Wilbur, Karsten Hansen, Munseob Lee	
Master of Business Administration	2016 - 2018
University of California, San Diego, Rady School of Management	
Bachelor of Engineering Electronics & Communication	2010 - 2014
College of Engineering, Guindy, Anna University	

FIELDS OF INTEREST

Pricing, Retail, Microeconomics, Econometrics, Causal Inference, Quantitative Marketing, Natural Language Processing, Deep Learning, Reinforcement Learning, Consumer Behavior

RESEARCH

Publications

“Do Firearm Markets Comply with Firearm Restrictions? How the Massachusetts Assault Weapons Ban Enforcement Notice Changed Registered Firearm Sales”, with Kenneth Wilbur, *Journal of Empirical Legal Studies*, Volume 19, 2022

Working Papers

“Unveiling Income as a Measure of Liquidity”

Work In Progress

“Scaling in Gig Economy”

“From Ailments to Actions: Forecasting Consumer Health Management with Machine Learning”

RESEARCH EXPERIENCE

Graduate Researcher, UC San Diego, Rady School of Management 2018 - Present

- Utilized **Python** and **Google Image API** to classify firearms into Assault Weapons, Non-Assault Weapons, Ambiguous, Handguns, Shotguns, and Unclassified categories.
- Developed a **Semi-Supervised Machine Learning** approach to identify and classify additional firearm sales within these categories.
- Predicted **counterfactual** firearm sales using advanced **Auto-Regressive Models**, accurately measuring the **Causal Effects** of the Massachusetts Assault Weapons Ban enforcement.
- Conducted **detailed analyses** of firearm sales trends, revealing a 560% spike in assault rifle sales within 5 days of the ban enforcement and a subsequent 66% reduction over the following year.
- Estimated the average impact of Economic Stimulus Payments on weekly household spending through **Causal Inference** techniques.
- Predicted household liquidity using an innovative methodology by employing the **XGBoost Algorithm** with an accuracy of 73%.
- Identified and selected **Key Performance Metrics** to evaluate the model’s effectiveness.
- Utilized **Google Maps API in R** to analyze and classify proximate locations, determining their positioning relative to each other (same or opposite sides of the road)
- Utilized **Principal Component Analysis** to extract important features for predictive models
- Developed and applied **Decision trees and Neural Networks** to forecast future consumer behaviors based on historical purchase data and events.
- Applied clustering techniques such as **K-Means** to categorize consumers into distinct groups.
- Developed **Game theory models** to analyze profitability between offering a single specialized service versus multiple services, with and without specialization.

- **Authored** research papers documenting literature review, methodologies, and findings. Provided actionable insights and recommendations based on the findings .

Research Assistant, UC San Diego, Rady School of Management 2018 - 2019

- Conducted **Market Analysis** and **Due Diligence**, resulting in a comprehensive case study on the Alzheimer's market.
- Researched financing methods for a venture capital firm pioneering a breakthrough Alzheimer's solution.
- **Authored** an in-depth case study for the launch of this solution within the U.S. market.
- Performed **Market Analysis** and **Due Diligence**, resulting in a comprehensive case study for the launch of an acne treatment product in the dermatology market.

Venture Capital Intern, Global Syndicated Ventures LLC, San Diego 2017

- Conducted **Due Diligence** and **Investment Analysis** on potential investment opportunities.
- Researched potential investments, preparing executive summaries and financial statements for companies.
- Identified avenues for capital investment and pinpointed individual and institutional investors interested in early-stage startups.
- Developed a robust business network through **Market Research** and outreach to prospective clients.

Research Assistant, Indian Institute of Management, Bangalore 2013

- Independently developed a crucial **Data Module** using **Tableau and R**, **integrating information from disparate sources** as a foundational step for constructing a multi-city urban hydrology database.

EXPERIENCE

Senior Merchandising Specialist, Target Corporation, Bangalore 2015 - 2016

- **Collaborated with buyers and business analysts** to execute the display and sales floor plan for Target's \$6B Health and Beauty division, managing 21 brands with a unique fixture forecast process.
- **Streamlined expenses** for cosmetics brands by optimizing Stock Keeping Units, simplifying fixture usage, and re-merchandising the Planogram, reducing overall expenses by approximately \$910K per year across all U.S. stores.
- Managed SharePoint and planned workload, key milestones, ownership, success measures, and risks for all projects within the division, ensuring 14 weeks of workload visibility at all times.
- **Compiled and analyzed** sales and financial reports by departments and prototypes, providing insights and recommendations.

Associate Business Analyst, Target Corporation, Bangalore 2014 - 2015

- Supported Target's Merchandising Operations in the U.S. via remote management.
- Mapped out effective and efficient utilization of store space for profit maximization in logistics and supply chain through continuous **Financial Data Analysis, Strategy Monitoring**, and modifying presentation guidelines.
- Identified process gaps and inefficiencies, creating solutions and **Automations** using **Excel and Macros**, reducing project time by 45%.
- Controlled, monitored, and drove strategy changes in assigned business areas in line with revenue goals by undertaking **Reporting, Forecasting**, and ad-hoc projects, and developed markdown strategies based on current performance and market trends.

TEACHING EXPERIENCE

Quantitative Analysis (MBA, MSBA)	2019, 2020, 2021, 2022, 2023
Pricing Analytics (MBA, MSBA)	2019, 2021, 2022, 2024
Managerial Decision Making (MBA)	2023
Customer Analytics (MBA, MSBA)	2022, 2024
Operations, Information Systems, & Data Analytics (MBA)	2023
Excel & Statistics Workshop (MBA)	2020, 2021, 2022
Lab to Market Workshop (MBA)	2020

Innovation in Market (Undergraduate)	2020, 2021
Quantitative Methods in Business (Undergraduate)	2020
Special Topics in Business Analytics: Business Analytics Consulting (MBA)	2022

SELECTED DOCTORAL COURSEWORK

Statistical learning and Machine learning

Statistical Learning I - Introduction to Pattern Recognition, Statistical Learning, **Bayesian Decision Theory, and Bayesian Parameter Estimation**

Statistical Learning II - Generative and Discriminant Learning

Statistical Learning III - Deep Learning and Applications: Applications to Vision, Speech, or Text processing

ML: Learning Algorithms – Introduction to AI: A Statistical Approach

Economics

Microeconomics A - Economic theories of Consumer and Producer Behaviour

Microeconomics B - General Equilibrium and Welfare economics

Microeconomics C - Static and Dynamic Games and Information

Econometrics A - Introduction to Probability theory, Sampling, and Statistical Theory

Econometrics B - Time Series Analysis, Linear Algebra and Estimation Methods

Econometrics C - Cross Section Econometrics and Panel Data Econometrics

Games and Information - Advance Topics in Game Theory

Mathematics for Economists

Marketing

Topics in Marketing Research - Research Methods

Experiments in Organizations - Design and Implementation of Field Experiments in Companies

Consumer Research Behavior

SKILLS

Technical Skills

PyTorch, TensorFlow, R, Python, tableau, SQL, Power BI, Causal inference techniques,, Matlab, Stata, C++, LATEX, Qualtrics, Google Analytics, JDA, Mathematica, AWS, Hadoop, Hive, Spark, Presto

Language

English (native), Kannada (native), Hindi (fluent speaking), Tamil (fluent speaking), Telugu (fluent speaking)

AWARDS AND HONORS

Rady Academic Year Fellowship 2019–Present

University of California, San Diego, Rady School of Management

Summer Research Fellowship 2019–Present

University of California, San Diego, Rady School of Management

Rady Scholar Fellowship 2014 - 2016

University of California, San Diego, Rady School of Management

REFERENCES

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PUBLICATIONS

“Do Firearm Markets Comply with Firearm Restrictions? How the Massachusetts Assault Weapons Ban Enforcement Notice Changed Registered Firearm Sales”, with Kenneth Wilbur, *Journal of Empirical Legal Studies*, volume 19, 2022

How well do firearm markets comply with firearm restrictions? The Massachusetts Attorney General issued an Enforcement Notice (EN) in 2016 to announce a new interpretation of the key phrase “copies and duplicates” in the state’s assault weapons ban. The EN increased assault rifle sales by 1349 (+560%) within 5 days, followed by a reduction of 211 (58%) over the next 3 weeks. Assault rifle sales were 64%–66% lower in 2017 than in comparable earlier periods, suggesting that the EN reduced assault weapon sales but also that many banned weapons continued to be sold.

WORKING PAPERS

“Unveiling Income as a Measure of Liquidity”

The concept of liquidity is intricate and subjective. It is widely studied in economic and financial realms. Researchers aiming to comprehend and quantify liquidity have utilized a variety of proxies in their examination of household liquidity, with household income being the primary indicator. This paper challenges the reliability of Household Income as a proxy for liquidity. Utilizing demographic and shopping behavior data, it estimates household liquidity and validates predictions by assessing the Economic Stimulus Payments influence on spending. The results suggest that integrating shopping behavior with demographic data provides a more nuanced and precise picture of household liquidity.