**Michael S. Morgan, PhD, MAS**

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**Marketing and Data Science Professional**

**Statistical Programming | Data Analysis | Project Leadership**

Top performing leader with long string of successes working with diverse clients to analyze & model data, providing actionable intelligence about business activities. Skilled in collaborating across disciplines to expand sample sizes and guide more effective methods to achieve common tasks. Demonstrable history of identifying opportunities and developing streamlined approaches to take advantage of them for the benefit of the company and associated clients.

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| --- | --- | --- |
| * Team Leadership * Staff Training & Development * Strategic Analysis * Data Resource Integration | * Quantitative and Textual Modeling * Operational Domains * New Business Development * Portfolio Optimization | * Big Data Sources & Testing * Risk/Return Modeling * Database Architecture * NLP and Cognitive Algorithms |

**PROFESSIONAL EXPERIENCE**

**MORGAN ANALYTICS,** Dallas, TX

***Chief Data and Marketing Scientist.*** July 2004 – Present

* Functional integration of data sources, work with large customer databases to help understand retention and churn.
* Manually program end-to-end online marketing research studies to study competitive markets as well as check the quality of vendor data and model results in big projects.
* See [www.morgananalytics.com.](http://www.morgananalytics.com.)

***Morgan Analytics is my own business,*** for which I have maintained a small but loyal customer base.

* When I am occupied full-time or whenever a conflict of interest arises, I also have a small network of data scientists, marketing researchers and database modelers to whom I outsource and firewall client work.
* Running my own company over the years has taught me how to both sell analytical work and present proposals and results. It has also provided opportunities for me to learn more about the data science field I have come to love.
* Fortunately, though I began in academia, I have able to keep up with the data science and marketing science scholarly communities over time and continue frequently to discover and absorb new ideas and techniques.

**VERIZON, INC.*,*** Irving, TX

***Senior Data Science Contractor,*** June 2015 – February 2017

Key contributor to creation of algorithms and models to provide better look at company performance, finding new ways to optimize profitability, develop kernel-driven propensity models and scored databases in SAS, SQL and R. Metrics and tests reveal improved customer revenue, cost, and profit predictive models. Also assisted in developing budget for data science team in 2015, providing costs for server hardware, SAS licenses and transition of team to R programming.

* Improved prediction of service and account cancellations, contract status, and profitability by designing dynamic, latent state transition model of customer value over monthly periods.
* Identified customers' service portfolio values by examining and modeling data monthly focused on presenting optimized offers and feature combinations, based on 6 million voice, video and data customer accounts.
* Collaborated across disciplines to support marketing and product development initiatives through database analysis.
* Conducted 60-hour Data Science Seminar for remote Verizon Data Science employees in India.
* Developed model of relationships between Verizon and vendor categories at the Enterprise level, value-scoring based on 25 million accounting entries.

**CIQ ANALYTICS INC.,** Dallas, TX

***SVP, CAO, Advanced Methods,*** June 2011 – July 2017

Added unique value in intellectual heft to company, bringing innovative approaches to analytics in consulting projects.

* Identified customer insights from wide range of data sources, applying modern modeling and analysis techniques to clarify into single resource.
* Optimized new online marketing channel for client by combining survey data with PRIZM social-age-income segments in client’s database.

**SAVITZ RESEARCH & CONSULTING,** Philadelphia, PA

***Research Design Expert and Statistical Consultant,*** November 1987 – July 2017

Delivered high quality statistical analysis and marketing consultation on complex research projects that have improved financial understanding and contributed to better decision making.

* Liaison to Upper level management capable of explaining complicated data results to other staff members.
* Applied diverse statistical and modeling methods including segmentation, multivariate methods, latent class, and hierarchical Bayes modeling to clarify marketing information and B2B studies.
* Developed specialized regression, classification, and optimization models for database analysis as well as several predictive models ***and Excel based simulators*** utilizing advanced statistical methods and discrete choice models.

**J. WALTER THOMPSON, MARKETING SCIENCE GROUP,** Irving, TX

***Senior Statistical Consultant.*** June 2007 – August 2009

Managed database analysis projects for marketing science groups with clients including FEMA, the US Marine Corp, HSBC Bank, and United Health Group. Focused on data for direct marketing, web site analytics, sales growth, and segmentation.

* Guided junior staff in methodologies, examining results for accuracy, reliability and common sense and maximizing their new skill acquisition, SAS programming (from ETS module), and the most powerful, valid tests of new findings.
* Took charge of ad hoc projects including new client pitches and new analytical projects, such as creation of time-to- conversion predictive model for direct mail, which pinpointed optimal time for follow-ups with target customers.

**YANKELOVICH, INC.,** Chapel Hill, NC

***SVP and Chief Analytics Officer.*** April 2006 – May 2007

Directed and maintained functional integration of data sources including primary research, syndicated data, and databases to provide information crucial to decision making.

* + Introduced latent variable frameworks to significantly improve how well models built from survey data could

optimally target and message subsets of the market in both customer and prospect databases.

* + Established innovative marketing science techniques in business units, allowing for additional models to be marketed and to open new markets for the enterprise.
  + Oversaw analytic staffing and leadership of primary and syndicated research groups as well as database modeling and production.

**NEXUS BUSINESS INFORMATION,** Euless, TX

***EVP and Chief Analytics Officer,*** August 2002 – June 2004

Consulted on statistical models and research design for several different clients focused in telecom and healthcare sectors.

* + Tracked significant changes in attitudes among physicians about support and services provided by for Texas Medical Association (TMA).
  + Combined new type of latent class analysis with existing model predicting adoption of new integrated wireline and wireless calling features, identified six "early" adopter segments who adopt at decreasing rates of speed, established an accurate prediction of first year sales, and developed strategies for capturing later, more price-savvy adopters.

**M/A/R/C RESEARCH,** Irving, TX

***VP and Senior Consultant, Marketing Science.*** April 2000 – August 2002

Administered diverse study analyses related to product design, customer satisfaction, concept testing, sales forecasting, market segmentation, customer database mining, price sensitivity and development of new online research functions.

* + Subject matter expert in high end B2B telecommunications, energy marketing, consumer technology, and packaged goods for different clients. Demonstrated for the staff the superiority of multinomial logit models over discrete choice when large numbers of attributes are required.
  + Designed and implemented effective tests capable of determining best possible models for data analysis.
* Supported marketing science efforts for online research group, providing weighting algorithms to help balance online sample demographics, complex survey design and multivariate data analytics routines.

***Employment Positions prior to 2000:*** *Senior Manager of Market Research and Database Marketing for Sprint Business (Dallas), Assistant Professor of Marketing for Cornell University (Ithaca, NY) and Teaching Assistant for UTD. (Richardson, TX).*

***Employment Positions prior to 1987.*** *P&L responsibility as a Rooms Division Manager for Lincoln Hotels (Dallas), General Manager of the Tropicana Travelodge Casino Hotel (Las Vegas), and Operations Director for consortium of lodging and restaurant units in California and Nevada (San Diego, CA). I managed approximately 120 unit managers and employees. Business strategy focused strongly on delivery of consistent value for the money at each lodging or restaurant entity. My own early form of yield management led to surprising net (EBITDA) profit increases for the two largest properties.*

**EDUCATION & CREDENTIALS**

**Doctor of Philosophy in Management and Marketing Science**, University of Texas at Dallas, Jindal School of Management,

Richardson, TX, 1990

**Master of Administrative Science in Economics**, University of Texas at Dallas, Jindal School of Management

Richardson, TX, 1990

**Bachelor of Arts in Government/Political Science (minors: Economics, Philosophy)**, University of Texas at Austin, College of Arts and Sciences, Austin, TX, 1974

**PROFESSIONAL AFFILIATIONS**

American Statistical Association, IEEE, INFORMS, Data Science Central, Google Advanced Analytics, American Marketing Association, ResearchGate.com.

**PROGRAMMING AND ANALYTICAL SKILLS**

Analytics and visualization:

* Analytical software - SAS, SPSS, R, Excel Solver. Full range of multivariate and univariate methodologies.
* Specialized programs for latent variable/class analysis and decision trees, structural equation modeling.
* Pre-processing of data as needed - standardization, transforms (e.g., spectral densities, particle filtering).
* Generating and pre-testing experimental designs to assess replicability and efficiency.
* Automated replication of model statistical diagnostics and parameter fit (residual graphics, F-tests, etc.)
* Visualization and simulation - Excel VBA, R.
* Formal business intelligence reporting tools - Excel, SQL, R, with automated network updating as needed.
* Database management tools - SQL (Teradata/MySQL, Oracle SQL) as data architecture systems.
* End-to-end online survey builds, implementation and advanced model estimation.

Distributed network data collection, storage and analysis:

* Java Core, Hadoop/MR/Hive, Python (web-scraping).
* Amazon Web Services (AWS).
* Text mining and analytics using R and Python.

Solving slow model estimation, convergence, missing and/or small data set limitations:

* Fast convergence tools - embedded C++, nonparametric Kernel estimation, constrained EM algorithms.
* Alternatives to otherwise formal (slow or difficult) parametric estimation of models - Monte Carlo, Empirical Bayes.
* Iterative Bayesian prior-to-posterior modeling for prediction and classification, use of "umbrella" distributions for acceptance/ rejection processing in MCMC parameter estimation.

Solving problems with data - managing multicollinearity and selecting best variable subset for prediction/classification:

* Management of multicollinearity using ridge regression, Lasso with L1 and L2 norms.
* Selection of "true drivers" from a large set of potential predictors - Lasso, sparsity-inducing priors, reduction to latent dimensions/classes.
* Elastic net ridge (lasso and ridge regression combined), automatic relevance determination.
* Selection of "true drivers" using Random Forests and other ensembling, including boosting and bagging (frequentist or Bayesian approaches).
* Use of nonparametric Kernels rather than parametric probabilities to capture phenomena such as inter-relationships among variables or unruly covariance or Hessian matrices.

Improving model fit and predictive and classification accuracy:

* Combining kernelling within regression, discriminant and other models designed to segregate or cluster variables and observations
* Measuring dynamic data flows with latent state transitions - hidden Markov models, random fields.
* Estimation of variational influences, Monte Carlo influences.
* Matching simulated parametric distributions to empirical distributions - importance sampling, rejection sampling, Kalman filters.
* Simulation experiments to test statistical power and confidence intervals.
* Developing AI systems for managing what-ifs:
* Combining neural networks (single and multi-layer) with AI-based rule systems for deep learning, prediction and classification.
* Extending deep neural networks with Bayesian methods.