Ben Yuhas, Ph.D.

YUHAS
DATA ANALYTICS

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Areas of Expertise

- Design and build data-science road maps to support business objectives
- Recruit, develop and manage the individuals required to deliver against the road map
- Communicate complex concepts to a broad set of technical and non-technical stake holders
- Deploy machine learning, statistics and segmentation to generate insights, improve forecasting and optimizing performance
- Promote learning through experimentation

Education

Ph.D. Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD
   - applied neural networks to estimate acoustics associated with images of the mouth
M.S. Electrical Engineering and Computer Science, Johns Hopkins University
B.A. Mathematics, the University of Chicago, Chicago, IL

Experience

Vice President of Data Science   **March 2019-present**
Amobee, Baltimore, MD
   Define and manage a data-science strategy to support Amobee's cross-channel platform. Deploy best-in-class methods, including *machine learning* to optimize real-time bidding and forecast inventory attributes; *linear programing* to allocate advertising investments across constrained inventory; *adversarial networks* to fuse data sources and create stable cross-channel identities; and *natural language processing to* enable contextual targeting.   Manage a staff of 40 in Redwood City, CA; Baltimore, MD and Tel Aviv, Israel.
   - Hired over 20 data scientists across three locations. Identified, promoted and mentored key personnel.
   - Developed the use of external data to drive cross-channel planning and four-screen reporting, including Nielsen AMRLD, Gracenote, Inscape, TiVo and Samba TV.
   - Fostered a culture of measurement to monitor performance and improve quality
   - Defined and manage a company-wed process to promote patentable IP
   - Advanced the growth of Amobee as a platform business, by reducing tech debt, avoiding custom solutions and lowering the reliance on manual intervention.

Adjunct Assistant Professor   **2018-present**
School of International and Public Affairs,
Columbia University, New York , NY
   Teaching a graduate course on the use of data in politics and development.

President   **2005-present**
Yuhas Consulting Group, Baltimore, MD
   Help commercial and non-profit clients use data to make better decisions. Developed data-centric strategies and solutions using world-class analytics and modeling. Our focus is on supporting start-up organizations and pilot projects within mature organizations. A list of sample clients and projects is attached.

Chief Scientist   2005-2007
Copernicus Analytics, LLC, Washington, DC
    Copernicus Analytics brought the sophistication of data science to political campaigns. As
    part of the start-up team, I managed the development of models to predict individual
    voter's behavior and designed experiments to measure the effectiveness of programs. Our
    work was featured in a front-page article in the *Wall Street Journal* on Oct. 31, 2006.

Senior Director of Database Marketing   2000-2005
Juniper / BarclaycardUS, Wilmington, DE
    Developed and built information-based strategies, capabilities and analytics to drive
    account acquisition. As part of the launch team, we grew Juniper to become the 19th
    largest U.S. credit card issuer with over 800,000 accounts across several co-branded card
    programs. Juniper was purchased by Barclays in 2004.

Senior Associate   1997-1999
First Annapolis Consulting, Baltimore, MD
    Responsible for selling, staffing and managing projects that leverage data to improve
    operations.

Principal of Global Business Intelligence Solutions   1996-1997
IBM Consulting Group, Baltimore, MD
    Led the business-intelligence consulting practice for telecommunications and media using a
    methodology that included business discovery, requirements definition, data discovery,
    systems design and prototype implementation. Product development work resulted in a
    U.S. Patent for entropy-based data-mining.

Research Scientist, Information Systems and Technologies Laboratory   1990-1995
Bell Communications Research (Bellcore), Morristown, NJ
    Designed and built customer algorithms to identify fraud from call patterns for the
    Regional Bell Operating Companies (RBOCs) using both neural networks and statistical
    algorithms.

Other

Mentor   2014
The Eric & Wendy Schmidt Data Science for Social Good Summer Fellowship
University of Chicago
    One of six experts selected to serve as mentors to data scientists working on projects with
    social impact. Served as technical advisor, project lead and primary interface to clients.
    Helped interns formulate the problem and then select, implement and communicate an
    analytic solution.

Chairman of Board for the *Ingenuity Project* a private and public collaboration that
promotes STEM education in Baltimore City's public schools.

2006 Volunteer of the Year, Packard Center for ALS Research at Johns Hopkins University

Selected Consulting Projects

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- Served as Chief Data Scientist for an accounts-receivable SAS solution. Designed and managed the development of ML models to assess the quality of the underlying AR asset and improve the efficacy of collections.
- Designed, built and deployed neural network models for a managed care provider to predict patient mortality based on demographics, social determinants and claims data.
- Developed large-scale machine learning models for a voter-file vendor to identify the probability of a given voter's ethnicity.
- Designed and developed predictive models to target voters for several political campaigns.   Resulting scores have been deployed in all fifty states and have been used by campaigns for president, governor, senate, house, as well as several ballot initiatives. Served in the Obama war room on Election Day in 2008.
- Increased renewal rates for a SaaS provider by modeling client behavior associated with higher retention. The client was able to increase renewal rates by redirecting their educational program toward increasing utilization of specific features.
- Developed the first consumer segmentation for *EMI Music* that defined how consumers interact with music and how they acquire new music. These segments drive new product development, artist acquisition and marketing. *Millward Brown* described the segmentation as "effectively used throughout the business" and "underpinned by strong analytics, a large amount of data and exceptional knowledge of the industry."
- Designed, built and deployed models to predict a consumer's *emotional* connection to a specific retail chain. Predictions were built using a combination of survey, demographic and transactional data. The resulting scores are used to drive loyalty.
- Created a data-driven brand renewal methodology with a management consulting firm. Models are used to identify actions that drive key metrics such as trust. The methodology has been successfully used to inform communication strategies across multiple verticals, including health care, consumer products, and energy providers.
- Evaluated the relative cost of care for diabetic patients treated under two different delivery models. Claims data were used to create cohorts and measure utilization.
- Developed quasi-experimental designs using propensity score matching to assess the impact of a health care management program on outcomes and costs.
- Measured the relative efficacy of a set of non-medical questions to predict which patients were likely to require an emergency room visit. Care was taken to balance sensitivity and specificity. Results were used to customize a tablet-based application
- Built and deployed models to predict the propensity for an individual to purchase solar power. The resulting scores have been used to target all acquisition campaigns for this start-up solar power provider.
- Targeted, implemented and tested all mail acquisition campaigns to support the launch of a technology-enabled primary care provider network. Campaigns were executed and analyzed monthly. Led the growth from one office to several offices in multiple cities.

Selected Consulting Clients

Healthcare

Care at Hand
Evergreen Health
Health Integrated
Johns Hopkins University
Health Data Science Group
One Medical Group

Media

BBC
Comcast (through Switchboard)
EMI Music
Hachette Publishing
Harper Collins Publishing
SONY

Other

Energy Plus
Fidelity & Guaranty Life
Headfirst Camps
Kessler Group
Motista
Navman Wireless (now Fortive)
Order Up
Purple Strategies
Sun Common
TSD Communications
Under Armour
Wilson Relationship Marketing
YayPay

Political & Non-profit

AFL-CIO
Americans for Responsible Solutions
Archdiocese of New York City
Atlantic Philanthropies
Ballot Initiative Strategy Center
Baltimore Teachers Union
Barak Obama for President (2008 general)
Catalist
Ceasefire PA
Center for Community Change
Clean Wisconsin
Conservation Minnesota
Democratic Parties of Virginia and Ohio
EMILY's List
Faith in Public Life
GBA Strategies
Greenberg, Quinlan & Rosner
Hillary Clinton for President (2008 IA Primary)
Human Rights Campaign
Joyce Foundation
League of Conservation Voters
NM Center for Civic Policy
Outdoor Alliance
Partnership Project Action Fund
Planned Parenthood of IA
Preservation Maryland
Project New America
Tim Kaine for Governor (2005 general)
Tom Wolf for Governor (2014 primary)
TSD Communications
Wisconsin Anti-Violence Effort

Selected Publications

Book

Neural Networks in Telecommunications, edited by B. P. Yuhas and N. Ansari, Kluwer Academic Publishers, Norwell, MA, 1994.

Patent

Quan G. Cung, Harry Roger Kolar, Kevin Eric Norsworthy, Julio Ortega, Frederick J. Scheibl, Vasken Torossian, and Ben Peter Yuhas; International Business Machine Corporation; *Method for computing models based on attributes selected by entropy*; US 7107192 B1 Issued: Sept 12, 2006

Refereed Papers

Aguiar E., Lakkaraju H., Bhanpuri N., Miller D., Yuhas B., Addison K. L. Identifying students at risk accurately and early. Who, when and why: a machine learning approach to prioritizing students at risk of not graduating high school on time. International Conference of Learning Analytics and Knowledge. March 2015.

J. Alspector, R. Meir, B. Yuhas and T. Jayakumar, "A Parallel Gradient-descent Method for Learning in Analog VLSI Neural Networks" in Advances in Neural Information Processing Systems (NIPS), 5, edited by S.J. Hanson, J.D. Cowan and C.L. Giles, Morgan-Kaufmann, San Mateo, CA, 1993.

R.E. Jenkins and B.P. Yuhas,"A Simplified Neural Network Solution through Problem Decomposition: the Case of the Truck-backer Upper", IEEE Transactions on Neural Networks, vol. 4, pp. 718-719, 1993.

B.P. Yuhas, M.H. Goldstein, Jr., T.J. Sejnowski and R.E. Jenkins, "Neural Network Models of Sensory Integration for Vowel Recognition", Proceedings of the IEEE, vol. 78, pp.1658-1668, 1990.

B.P. Yuhas, T.J. Sejnowski, M.H. Goldstein, Jr., and R.E. Jenkins, "Combining Visual and Acoustic Speech Signals with a Neural Network Improves Intelligibility" in Advances in Neural Information Processing Systems (NIPS), 2, edited by D. Touretzky, Morgan-Kaufmann, San Mateo, CA, pp 232-239, 1990.

B.P. Yuhas, M.H. Goldstein and T.J. Sejnowski. "Integration of Acoustic and Visual Speech Signals Using Neural Networks", IEEE Communications Magazine, vol. 27, pp. 65-71, November 1989. (Invited paper)

Book Chapters

D.E. Duffy, B.P. Yuhas, A. Jain and A. Buja, "Empirical Comparisons of Neural Networks and Statistics for Classification and Regression," In: B. P. Yuhas and N. Ansari (Eds.) Neural Networks in Telecommunications, Kluwer Academic Publishers, Norwell, MA, 1994.

B.P. Yuhas, M.H. Goldstein, Jr., T.J. Sejnowski and R.E. Jenkins, "Neural Network Models of Sensory Integration for Vowel Recognition." In: C. Lau (Ed.) Foundations of Neural Networks, IEEE Press. Piscataway, NJ, 1991.

Selected Talks, Posters and Presentations

"Identifying Interactions between Prescribed Drugs and Survival Rates of ALS Patients Using Medicare Data." Johns Hopkins University's Robert Packard ALS Center 15th Annual Research Symposium, Baltimore, MD, February 2015.

"An Empirical Comparison of Neural Networks and Statistical Methods on Classification and Regression Problems from Telecommunications", International Centre for Mathematical Sciences Workshop on Statistics and Neural Networks. Edinburgh, Scotland, April 19-20, 1995.