

ALEXANDER BERENBEIM, Ph.D

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Technical Consultant | Data Scientist | Researcher

Strategic Technical Consultant with 5+ years of experience overcoming complex architectural and scalability issues in diverse industries - using predictive modeling, data processing, and data mining algorithms. Recognized for articulating strategic vision and tactical execution. Strong background in structural governance and processes. Expertise includes:

Technical	Web Development Data Analysis Problem Abstraction Mathematics of AI Game Theoretic Logic Numerous programming languages including Python and Java
Business	Organization Management Research Team Leadership Business Analysis Business Presentations Communicating technical terms and complexities in layman's language

Professional Experience:

Lead AI Researcher / Strategic and Technical Consultant

Omnivalence Consulting Group, LLC - Denver, CO | 09/2021 - Present

Lead technical researcher and consultant, responsible for operations, concept development, and architecture designs for start-up clients

Concept and architecture design:

- Lead AI researcher, in charge of training internal company models for the forecasting of commodity prices & inflation rates, and building an interactive applet to query for macro-economic and labor statistics.
- Partnered with client's UX Engineer to create the backend tools to allow individual clients to view private pages that display relevant business intelligence products from the client's proprietary database.
- Built deep learning NLP algorithms using PyTorch and nltk to conduct sentiment analysis in multiple languages.
- Established client's core market intelligence databases: Designed web-crawler to gather CSV and JSON data and automatically update internal databases, which use PostgreSQL.
- Automated business processes: Acted as client's Chief Software Architect and designer of a learning model. Developed the data structures deployed, and programmed the GUI for software product.

Business Operations:

- Corporate governance and tax structure: Oversaw day-to-day operations and client management; authored the articles of incorporation and operating agreements for clients, determining the best location for incorporation due to the remote nature of work.
- Client Relations: Authored letter of intent for clients, setting and pricing project milestones and timelines.

Graduate Teaching Assistant

University of Illinois at Chicago – Chicago, IL | 01/2016 - 12/2021

University of Waterloo – Waterloo, ON | 08/2013 - 12/2014

Taught and tutored courses including Calculus I and III, Teaching Calculus II, Linear Algebra, Real Analysis I, Game Theory, Numerical Analysis, and Algorithms I.

Develop teaching materials based on subject matter expertise:

- Devised grading rubrics and evaluated correctness of Octave/Matlab code, student submitted algorithms, and formal proofs based on personal knowledge and expertise for Game Theory, Real Analysis I, Numerical Analysis, and Algorithms I.

Technical Management Consultant/ Data Scientist

MedImpact Healthcare Systems – San Diego, CA | 05/2013 - 08/2014

Use Mathematical expertise to develop and understand mathematical principles to analyze data and solve real-world problems.

Improved sales efforts and processes:

- Conducted extensive analysis on data gathering protocol and detected sales anomalies from employee errors and harmful practices by performing multidimensional cluster analysis and structural equation modeling to determine the relationships between external sales environment and internal performance.
- Facilitated the development of business analytics and predictive models through preparing and delivering multiple reports to the Director of Sales Operations, Jonathan McDooling and the Vice President of Business Development, Gordon Romanas.

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Graduate Student Consultant

Prodigy Network – New York, NY | 10/2011 - 04/2012

Grantoo – New York, NY | 10/2011 – 04/2012

Provided business solutions through data acquisition, instrumentation, and data analysis & management as part of a team of graduate

Model-based solutions for decision making:

- Designed a stochastic optimal control model for the pricing of escrow rights for foreign construction projects.
- Designed and programmed simulations of various pricing models for advertiser contracting, based on demographic, demand and supply factors.

Project Management:

- In charge of managing the technical details and team in our group of 8 international students, and relating insights to clients.

Data Scientist

Home Box Office, Inc – New York, NY | 09/2010 – 04/2011

Provided business solutions through data acquisition, instrumentation, and data analysis and management.

Data Exploration and Analysis:

- Determined optimal policies for HBO's anti-piracy measures by designing experiments, gathering data on sources of online piracy and running multivariate probit models, and reporting findings to Director, Anti-Piracy, Steven Rosenthal.

Co-Founder

Western Independent LLC - Henderson, NV | 02/2010 - 08/2013

Collaborated with diverse stakeholders to identify and develop multimedia intellectual property for films, live events, and art installations.

Creative and technical project management:

- Co-directed, co-wrote, edited, & photographed films, and commercial & corporate videos for clients. Directed all budgeting, scheduling and project logistics for production.
- Performed media market research for corporate clients to identify optimal language for corporate videos.

Technical Skills:

Adobe Photoshop, Adobe Premiere, Arch Linux, C, Coq, DaVinci Resolve, Final Cut Pro, Java, JavaScript, Logic, Matlab, Microsoft Office Suite, Octave, OCaml, PHP, Prolog, Python, R, Stata, VBA

Education:

Ph.D. in Pure Mathematics (GPA: 4.00)

University of Illinois at Chicago | Thesis: Foundations for the Analysis of Surreal-valued Genetic Functions | 2021

Master of Math in Pure Mathematics (GPA: 80.42~3.53)

University of Waterloo | Thesis: Some Preliminary Steps Towards A Formally Verified Proof of the Weil Conjectures | 2015

Master of Science in Management Science & Engineering (GPA: 3.79)

Columbia University, SEAS & GSB | 2012

B.A in Mathematics & B.A. in Economics (GPA: 3.71; Econ GPA: 3.70; Math GPA: 3.69)

Columbia University, Columbia College | 2011

Additional Experience:

Paralegal: *Nathan, Dumm, & Mayer P.C. – Denver, CO* | 01/2013-05/2013

Media Consultant: *World Science Festival – New York, NY* | 05/2012-10/2012

Research Assistant: *Columbia Law School – New York, NY* | 05/2011-12/2011

Intern: *Initiative For Policy Dialogue – New York, NY* | 09/2008-04/2009