Mark Derdzinski

Data Scientist & AI Leader

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PROFILE

Strategic leader in artificial intelligence (AI), machine learning (ML), and data science, eager to advance the field of large language models (LLMs) and Generative AI (GenAI). Currently leading AI agent design, alignment, risk assessment, and research at an S&P 500 healthtech company. Deployed the first Generative AI platform in glucose biosensing, including technical evaluation strategy to support regulatory approval. Proven track record building high-performing teams and excelling as a technical leader in highly ambiguous, complex, and fast-paced environments.

EDUCATION

Ph.D. Physics University of California San Diego　　　　　　　　　　　　　　　*June 2018*
B.A. Physics and Mathematics University of California Berkeley　　　　　　　*Dec. 2011*

PROFESSIONAL EXPERIENCE

Dexcom

Sr. Manager, Data Products & AI　　　　　　　　　　　　　　　*Sept. 2023 - Present*
◇ Leading Dexcom's AI team of scientists, software engineers, and mobile devs contributing to AI/ML products
◇ Launched the first regulated GenAI platform in a commercially-available biosensing medical device
◇ Implemented LLM evaluation strategy for FDA-regulated features, including tests for accuracy and safety
◇ Created technical framework for measuring and monitoring alignment of AI agents in production applications
◇ Founded AI Research team advancing multi-modal modeling and continuous learning applications for biosensing
◇ Published Generative AI research on differentially-private generative adversarial networks (DP-GANs)
◇ Spearheading development of AI agents to help patients and healthcare practitioners interpret medical data

Sr. Manager, Data Science　　　　　　　　　　　　　　　*Sept. 2022 - Sept. 2023*
Manager, Data Science　　　　　　　　　　　　　　　*Nov. 2020 - Sept. 2022*
◇ Managed the Experience Individualization Team, including scoping, prioritization, and resourcing of new projects
◇ Launched A/B experimentation platform and process, increasing user engagement through targeted outreach
◇ Authored and oversaw new data science hiring protocol, doubling and diversifying the global data science team
◇ Created an organization-wide analytics request process, delivering >100 analyses and accelerating market access
◇ Presented data science portfolio and long-term roadmap to Board of Directors, informing organizational strategy
◇ Executed data use agreements with multiple universities, expanding IP portfolio through research partnerships

Staff Data Scientist　　　　　　　　　　　　　　　*March 2020 - Nov. 2020*
Sr. Data Scientist　　　　　　　　　　　　　　　*May 2018 - March 2020*
◇ Oversaw launch of new customer onboarding experience, addressing critical CX gaps in >1M new user journeys
◇ Organized user data and marketing system integration, leading technical contributors in R&D, IT, and Marketing
◇ Created framework in SQL for measuring product engagement, utilized by data practitioners in multiple teams
◇ Published real-world data insights in >10 manuscripts and conference proceedings, used in marketing claims

University of California San Diego

Doctoral Student Researcher　　　　　　　　　　　　　　　*Sept. 2013 - May 2018*
◇ Supported data operations (including processing and storage) for six analysis teams, used in multiple publications
◇ Built shared frameworks in C++ and Python for processing petabytes of data with HTCondor and Hadoop
◇ Employed Monte-Carlo methods for background event simulation and likelihood analysis for signal detection

TECHNICAL SKILLS

Artificial Intelligence (AI), Machine Learning (ML), Generative AI, Large Language Models (LLM), Prompt Engineering, AI Alignment, LLM Evaluation, Time Series Analysis, Deep Learning, Statistics, Experimentation, A/B Testing, Metric Definition, Feature Engineering, Monte Carlo Simulation, High-Throughput Computing, Data Architecture, Research Design, Survey Instrumentation, Public Speaking, Sprint Planning, C++, Python, SQL, Cloud Platforms

SELECT PATENTS

Continuous Glucose Monitoring Follower and Social Support Enhancements, US-20240203584-A1, 20 June 2024.

Determining User-Specific Hyperparameters for Decision Support Models, US-20240194341-A1, 13 June 2024.

Determining Decision Support Outputs Using User-Specific Analyte Level Criteria, US-20240172999-A1, 30 May 2024.

ML Techniques for Optimized Communication with Users of a Software Application, US-20240048516-A1, 8 Feb. 2024.

ML Models for Data Development and Providing User Interaction Policies, US-20230186115-A1, 15 June 2023.

Glucose Monitoring Over Phases and Corresponding Phased Information Display, US-20230133195-A1, 4 May 2023.

Glycemic Impact Prediction For Improving Diabetes Management, US-20230136188-A1, 4 May 2023.

Behavior Modification Feedback For Improving Diabetes Management, US-20230140143-A1, 4 May 2023.

Glucose Level Deviation Detection, US-20230134919-A1, 4 May 2023.

Feedback For Improving Diabetes Management, US-20230135175-A1, 4 May 2023.

Ranking Feedback For Improving Diabetes Management, US-20230138673-A1, 4 May 2023.

ML Techniques for Optimized Communication with Users of a Software App, US-20230077948-A1, 16 March 2023.

Systems for Determining Similarity of Sequences of Glucose Values, US-20220361779-A1, 17 Nov. 2022.

Meal and Activity Logging with a Glucose Monitoring Interface, US-20220202319-A1, 30 June 2022.

User Interfaces for Glucose Insight Presentation, US-20220202320-A1, 30 June 2022.

Glucose Measurement Prediction Using Stacked Machine Learning Models, US-20210378563-A1, 9 Dec. 2021.

Glucose Prediction Using ML and Time Series Glucose Measurements, US-20210375448-A1, 2 Dec. 2021.

Hypoglycemic Event Prediction Using Machine Learning, US-20210338116-A1, US-20210343402-A1, 4 Nov. 2021.

SELECT PUBLICATIONS AND CONFERENCE PROCEEDINGS

GlucoSynth: Generating Differentially-Private Synthetic Glucose Traces, Lamp J., Derdzinski M., Hannemann C., van der Linden J., Feng L., Wang T., and Evans D., NeurIPS Poster Presentation (Nov. 2023)

AI in the Workplace: Privacy Impacts & Risks, Panel Presentation, IAPP San Diego KnowledgeNet Panel (27 Sept. 2023)

GlucoSynth: Generating Differentially-Private Synthetic Glucose Traces, Lamp J., Derdzinski M., Hannemann C., van der Linden J., Feng L., Wang T., and Evans D., arXiv:2303.01621 (March 2023)

Real-World Evidence and Glycemic Improvement Using Dexcom G6 Features, Akturk H., Dowd R., Shankar K., and Derdzinski M., Diabetes Technology & Therapeutics (March 2021)

Patient Engagement with Dexcom G6: Does Use of More Features Lead to Better Patient Outcomes?, Oral Presentation, Advanced Technologies & Treatments for Diabetes (ATTD), February 2020

Real-Time Sharing and Following of Continuous Glucose Monitoring Data in Youth, Welsh, J.B., Derdzinski, M., Parker, A.S. et al., Diabetes Therapy (January 2019)

Sharing of Real-Time Continuous Glucose Monitoring Data by Adults: Associations with Device Utilisation and Glycaemic Parameters, Poster Presentation, European Association for the Study of Diabetes (EASD), September 2019

Hypoglycemia Reductions with the Dexcom G6 CGM System's Predictive Alert, Poster Presentation, American Diabetes Association (ADA), June 2019

Real-World Hypoglycemia Avoidance with a Continuous Glucose Monitoring System's Predictive Low Glucose Alert, Puhr S., Derdzinski M., Welsh J.B., Parker A., Walker T., and Price D., Diabetes Technology & Therapeutics (April 2019)

Sharing of Real-Time Continuous Glucose Monitoring Data Improves Device Utilization and Glycemic Parameters in Youth, Oral Presentation, Advanced Technologies & Treatments for Diabetes (ATTD), February 2019

Real-World Hypoglycemia Avoidance with a Predictive Low Glucose Alert Does Not Depend on Frequent Screen Views, Oral Presentation, Advanced Technologies & Treatments for Diabetes (ATTD), February 2019