Bianca Zadrozny

https://www.linkedin.com/in/biancazadrozny/

https://scholar.google.com/citations?user=lSyUzLEAAAAJ

+55-21-99427-8904 | biancaz@gmail.com

Education

Ph.D. in Computer Science (Artificial Intelligence): University of California, San Diego (1999–2003).

B.Sc. in Computer Engineering: Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio) (1994–1998).

Professional Experience

Senior Research Manager, IBM Research Brazil, RJ, Brazil: Led research in artificial intelligence for geospatial data with a focus on climate and sustainability applications (2020–2025).

Research Manager, IBM Research Brazil, RJ, Brazil. Led research in artificial intelligence for decision making in the areas of oil&gas and mining, with a focus in developing workflows to aid geoscientists in the discovery of natural resources (2012–2020).

Research Scientist, IBM Research Brazil, RJ, Brazil: Contributed to research projects in machine learning applied to smart cities (2012–2020)

Assistant Professor, Department of Computer Science, Fluminense Federal University (UFF), RJ, Brazil (2006–2011).

Research Scientist, IBM T.J. Watson Research Center, NY, USA . Machine learning research applied to digital marketing (2003–2006).

Selected Research Project Leadership

Prithvi (NASA IMPACT & IBM Research Partnership): Research and development of a family of geospatial foundation models for Earth observation data (Jan 2023–Dec 2025).

Cognitive Geologist (Gazprom Neft & IBM Research Partnership Research and development of a probabilistic reasoning engine, combining knowledge-based and ML approaches for oil and gas prospect evaluation (July 2018–July 2020).

Goldcorp Cognitive Journey (Goldcorp-Newmont & IBM Research Partnership): Research and development of a predictive modeling methodology for estimating gold mineralization levels (July 2017–July 2018).

Data-driven Analytics for Upstream and Unconventionals (Shell Research & IBM Research Partnership): Research and development of methodologies to identify unconventional oil and gas sources through semi-automated data analysis (Aug 2016–July 2018).

Selected Editorial & Academic Service

Editor: *Discover Data* (March 2023–Present).

Applied Data Science Track Chair: 30th ACM SIGKDD (2024–2025).

Workshops Chair: 29th ACM SIGKDD (August 2023).

Senior Program Committee Member: AAAI Conference on Artificial Intelligence (2025).

Program Committee Member: BRACIS (2025) and NeurIPS (2025).

Awards and Honors

Open Science Recognition Prize, American Geophysical Union, 2025.

NASA Marshall Space Flight Center Group Achievement Award, 2024.

IBM Outstanding Technical Achievement Award: "Pioneering Foundation Models and Generative AI for Accelerated Discovery", 2024.

IBM Outstanding Technical Achievement Award – “Key contributor to Goldcorp Cognitive Journey”, 2020.

Best of IBM Award, 2017.

IBM Outstanding Technical Achievement Award – “Research Contributions in Cost-sensitive Learning and Sample Selection Bias Correction”, 2017.

IBM Research Division Award – “Neural Character Embeddings for Natural Language Processing”, 2017.

CNPq Fellowship (Level 2) – 3-year fellowship for researchers with notable achievements – from March 2007 to February 2010.

IBM Ph.D. Fellowship – 1-year fellowship for distinguished students working in areas related to IBM interests – from September 2002 to August 2003.

NSF Graduate Research Fellowship – 3-year fellowship for outstanding graduate students in science and engineering – from September 1999 to August 2002.

PUC-Rio Academic Performance Scholarship – 5-year scholarship fully covering undergraduate tuition.

Selected Invited Talks

AI for extreme weather, AI Climate Institute Pilot Workshop, Belém, Brazil (Oct 2025).

Foundation models for geospatial AI, INRIA Brazil Workshop, LNCC, Petrópolis, Brazil (Apr 2024).

Machine learning for climate risk, 17th WiML Workshop at NeurIPS, New Orleans, USA (Nov 2022).

Spatiotemporal machine learning for climate modeling and applications to agriculture, TrustEAT Scientific Lectures (May 2021).

Evaluating classifier learning methods under covariate shift and spatial correlation, LATIN 2020 – 14th Latin American Theoretical Informatics Symposium (Jan 2021).

Machine learning for subsurface characterization, Khipu.AI Latin American Meeting in Artificial Intelligence, Montevideo, Uruguay (Nov 2019).

Augmented intelligence for decision-making in knowledge intensive professions, Big Data Week São Paulo (Nov 2019).

Machine learning for subsurface characterization, LatinX in AI Workshop at the International Conference on Machine Learning (Jun 2019).

Selected Publications and Patents

(For a complete list of publications see my Google Scholar profile)

Szwarcman, D. et al., Prithvi-EO-2.0: A Versatile Multitemporal Foundation Model for Earth Observation Applications. IEEE Transactions on Geoscience and Remote Sensing, vol. 64, pp. 1-20 (2026).

Oliveira, D., Zadrozny, B., Watson, C., Guevara, J., Automatic Weather Event Impact Estimation, US Patent 12,242,021 (2025).

Szwarcman, D., Guevara, J., Macedo, M.M.G., Zadrozny, B., Watson, C., Rosa, L., Oliveira, D., Quantizing reconstruction losses for improving weather data synthesis. Scientific Reports 14, 3396 (2024).

Jakubik, J., Roy, S., Phillips, C. E., Fraccaro, P., Godwyn, D., Zadrozny, B., Szwarcman, D., Gomes, C. et al. Foundation Models for Generalist Geospatial Artificial Intelligence. arXiv:2310.18660v2 (2023).

Diaz, J., Zadrozny, B., Carvalho, B., Buoro, A., Kormaksson, M, Lu, L., Tolle, J., Hohl, D., Limbeck, J., Wu, M., Machine learning platform for processing data maps, US Patent 11,719,842 (2023).

Zadrozny, B., Cerqueira, R., Flach, B., Mello, U., Assisting prospect evaluation in oil and gas exploration, US Patent 11,348,021 (2022).

Hoffimann, J., Fiorini, S., Carvalho, B., Codas, A., Raoni, C., Zadrozny et al., Probabilistic knowledge-based characterization of conceptual geological models, Applied Computing and Geoscience 10 (2021).

Kormaksson, M., Vieira, M., Zadrozny, B., Resource identification using historic well data, US Patent 10,822,923 (2020).

Guevara, J., Zadrozny, B., Buoro, A., Lu, L., Tolle, J., Limbeck, J., Hohl, D., A machine-learning methodology using domain-knowledge constraints for well-data integration and well-production prediction, SPE reservoir evaluation & engineering (2019).

Carvalho, B., Civitarese, D., Szwarcman, D, Cavalin, P, Zadrozny, B., Moreno, M., Marsden, S., Ore contente estimation based on spatial geological data through 3D convolutional neural networks, 81st EAGE Conference and Exhibition (2019).

Chevitarese, D., Szwarcman, D, Brazil, E., Zadrozny, B., Efficient classification of seismic textures, International Joint Conference on Neural Networks, 1-8 (2018).

Guevara, J., Zadrozny, B., Buoro, A., Tolle, J., Limbeck, J., Wu, Mingqi, Hohl, D., An interpretable machine learning methodology for well data integration and sweet spotting identification, NIPS Workshop book (2018).