

Exponent®
Engineering & Scientific Consulting

Giacomo Koszegi, Ph.D.

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Professional Profile

Dr. Koszegi is a theoretical particle physicist with experience in both rigorous mathematical analysis and computational techniques. He leverages his fundamental physics expertise to lend a unique perspective on clients' technical challenges, including circuit design review, failure analysis, component- and system-level testing, and ADAS testing. He also has extensive teaching experience. Dr. Koszegi utilizes his broad theoretical background, combined with laboratory and experimental training gained from his teaching appointments and undergraduate education, to efficiently identify, examine, and resolve the salient details of the project at hand.

Prior to joining Exponent, Dr. Koszegi obtained his Ph.D. from the University of California, Santa Barbara. His research background covers a wide range of physics beyond the Standard Model, including particle phenomenology, discovery potential at future experiments, early universe physics, and machine learning applications at colliders. On the theoretical side, he has studied the strong CP problem, muon colliders, and early universe phase transitions. On the computational side, Dr. Koszegi used machine learning methods to discriminate signal and background events in simulated particle collider data. For this project, he integrated mathematical analysis with extensive troubleshooting to enhance the theoretical robustness and resource efficiency of his team's code implementation.

Additionally, Dr. Koszegi performed research in experimental condensed matter physics and materials science laboratories as an undergraduate, from which he gained valuable exposure to cryogenic systems, X-ray diffraction (XRD), and scanning electron microscopy (SEM). Throughout his academic career he served as a teaching assistant for numerous theory and lab courses, at both the undergraduate and graduate levels. He also served as a teaching associate (instructor of record) for an undergraduate course in advanced quantum mechanics while at the University of California.

Academic Credentials & Professional Honors

Ph.D., Physics, University of California, Santa Barbara, 2023

M.A., Physics, University of California, Santa Barbara, 2021

B.S., Physics, California Institute of Technology (Caltech), 2018

Jack Kent Cooke Foundation (JKCF) College Scholarship, 2014-2018

Len DeBenedictis Graduate Fellowship, 2021

Licenses and Certifications

Northwestern University Center for Public Safety, Traffic Crash Reconstruction for Engineers

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Prior Experience

Graduate Student Researcher, University of California, Santa Barbara, 2019-2023

Teaching Assistant, University of California, Santa Barbara, 2018-2023

Teaching Associate, University of California, Santa Barbara, 2022

Teaching Assistant, California Institute of Technology, 2017

Professional Affiliations

Society of Automotive Engineers (SAE)

Publications

Safaoui S, Koszegi G, Kuykendal M. Safety Risks for EV DC Fast Charging Adapters. 2025 IEEE International Symposium on Product Compliance Engineering (2025).

Kuykendal M, Easter C, Koszegi G, Paradiso M, Scally S, Alexander R. Advanced Driver Assistance Systems (ADAS): Assessing the Efficacy of Non-Impact Testing for Evaluating the Performance of Frontal Collision Mitigation Technology. SAE Technical Paper 2025-01-8056 (2025).

Cai T, Cheng J, Craig N, Koszegi G, Larkoski A. The phase space distance between collider events. Journal of High Energy Physics 2024, 54 (2024).

Scally S, Paradiso M, Koszegi G, Easter C, Kuykendal M, Alexander R. Advanced Driver Assistance System (ADAS) Performance Variability with Partial Overlap Targets. SAE Technical Paper 2024-01-2038 (2024).

Garcia Garcia I, Koszegi G, Petrossian-Byrne R. Reflections on Bubble Walls. Journal of High Energy Physics 2023, 13 (2023).

Al Ali H, Arkani-Hamed N, Banta I, Benevedes S, Buttazzo D, Cai T, Cheng J, Cohen T, Craig N, Ekhterachian M, Fan J, Forslund M, Garcia Garcia I, Homiller S, Koren S, Koszegi G, Liu Z, Lu Q, Lyu KF, Mariotti A, McCune A, Meade P, Ojalvo I, Oktem U, Redigolo D, Reece M, Sala F, Sundrum R, Sutherland D, Tesi A, Trott T, Tully C, Wang LT, Wang M. The Muon Smasher's Guide. Reports on Progress in Physics 85, 084201 (2022).

Harder B J, Good B, Schmitt M, Kowalski B, Koszegi G, Johnson M T, Faber K T. Deposition of electrically conductive zirconium monoxide via plasma spray-physical vapor deposition. Journal of the American Ceramic Society 105, 3568– 3580 (2022).

Craig N, Garcia Garcia I, Koszegi G, McCune A. P not PQ. Journal of High Energy Physics 2021, 130 (2021).

Presentations

Koszegi G, Safaoui S. Safety Risks for EV DC Fast Charging Adapters. IEEE ISPCE 2025, San Francisco, CA (May 2025).

Koszegi G, Easter C. Advanced Driver Assistance Systems (ADAS): Assessing the Efficacy of Non-Impact Testing for Evaluating the Performance of Frontal Collision Mitigation Technology. SAE WCX 2025, Detroit, MI (April 2025).

Project Experience

Performed advanced driver assistance system (ADAS) testing. Conducted circuit design review, failure analysis, and testing for various consumer electronics.