Exponent®
Engineering & Scientific Consulting

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Professional Profile

Dr. Schmitt helps clients accelerate product development and solve complex engineering challenges by integrating expertise across electrical, software, and mechanical systems. With more than a decade of experience, he supports clients from concept to realization by designing, analyzing, and optimizing innovative products and test systems. His work spans electronic design and failure analysis, software design from firmware to data modeling, design for manufacturing and assembly, and modeling complex physical systems.

Prior to joining Exponent, Dr. Schmitt served as Chief Technology Officer of an alternative energy startup, where he led the design and deployment of custom hardware, software, and manufacturing infrastructure. He guided product strategy by combining advanced physical modeling with hands-on system development.

Dr. Schmitt has deep experience in digital signal and image processing, optimization algorithms, embedded systems, and cybersecurity. He is proficient in C/C++, Java, Matlab, LabVIEW, and Python, and has designed one-of-a-kind systems for measurement, control, and analysis.

At Stanford University, Dr. Schmitt earned his Ph.D. in condensed matter physics and completed postdoctoral research on high-temperature superconductors, charge-density wave materials, and topological insulators. He has authored over 25 peer-reviewed publications and holds nine patents.

Academic Credentials & Professional Honors

Ph.D., Applied Physics, Stanford University, 2011

M.S., Physics, University at Albany, 2003

Prior Experience

Advisor, Spark Thermionics Inc., 2024-2025

CTO, Spark Thermionics Inc., 2016-2024

Senior Staff Researcher, Synaptics Inc., 2015-2016

Staff Systems Architect, Synaptics Inc., 2013-2015

Post-doctoral researcher, Stanford University, 2011-2013

Patents

WO2016018530A: Improved stackup for touch and force sensing, February 2016 (Felix Schmitt, Richard R. Schediwy)

US-20170090670-A1: Mitigating interference in capacitance sensing, March 2017 (Matthew Stevenson, Felix Schmitt)

US-9904412-B2: Display noise subtraction via substantially orthogonal noise templates, February 2018 (Matthew Stevenson, Felix Schmitt)

US-20170285773-A1: Active pen signal detection, August 2018 (Oscar Ayzenberg, Felix Schmitt)

US-10275080-B2: Method and apparatus for constant response from shape memory alloy, April 2019 (Felix Schmitt)

US-10699886-B2: System and method for thermionic energy conversion, June 2020 (Felix Schmitt, Jared William Schwede, Adam Lorimer)

US-10642428-B2: Engineering displacement response through electrode shape, May 2020 (Mihai Bulea, Felix Schmitt)

US-11264144-B2: System and method for thermionic energy conversion, March 2022 (Kyana van Houten, Lucas Heinrich Hess, Jared William Schwede, Felix Schmitt)

WO2023122177A1: Burner system and method of operation, June 2023 (Felix Schmitt, Jared William Schwede, David Rich, Tyler Sandberg)

Publications

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Thickness-Dependent Coherent Phonon Frequency in Ultrathin FeSe/SrTiO3 Films, S. Yang, J. A. Sobota, D. Leuenberger, A. F. Kemper, J. J. Lee, F. T. Schmitt, W. Li, R. G. Moore, P. S. Kirchmann, and Z.-X. Shen, Nano Lett. 15, 4150 (2015)

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Liu, Y. Zhang, R. Yu, J.X. Zhu, J.J. Lee, R.G. Moore, F.T. Schmitt, W. Li, S.C. Riggs, J.H. Chu, B. Lv, J. Hu, M. Hashimoto, S.K. Mo, Z. Hussain, Z.Q. Mao, C.W. Chu, I.R. Fisher, Q. Si, Z.X. Shen, D.H. Lu, Nature Communications 6, 7777 (2015)

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Interface Ferroelectric Transition near the Gap-Opening Temperature in a Single-Unit-Cell FeSe Film Grown on Nb-doped SrTiO3 Substrate, Y.-T. Cui, R. G. Moore, A.-M. Zhang, Y. Tian, J. J. Lee, F. T. Schmitt, W.-H. Zhang, W. Li, M. Yi, Z.-K. Liu, M. Hashimoto, Y. Zhang, D.-H. Lu, T. P. Devereaux, L.-L. Wang, X.-C. Ma, Q.-M. Zhang, Q.-K. Xue, D.-H. Lee, and Z.-X. Shen, Phys. Rev. Lett. 114, 037002 (2015)

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Charge-orbital-lattice coupling effects in the dd excitation profile of one-dimensional cuprates, J. J. Lee, B. Moritz, W. S. Lee, M. Yi, C. J. Jia, A. P. Sorini, K. Kudo, Y. Koike, K. J. Zhou, C. Monney, V. Strocov, L. Patthey, T. Schmitt, T. P. Devereaux, Z.-X. Shen, Physical Review B 89, 041104(R) (2014)

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Analysis of the spectral function of Nd1.85C0.15CuO4, obtained by angle-resolved photoemission spectroscopy, F. Schmitt, W. S. Lee, D.-H. Lu, W. Meevasana, E. Motoyama, M. Greven, Z.-X. Shen, Physical Review B 78, 100505 (2008)

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