

Jeremiah Stepan, P.E.
Senior Engineer

Professional Profile

Mr. Jeremiah Stepan is a Senior Engineer in Exponent's Electrical Engineering and Computer Science practice. Mr. Stepan specializes in electrical and electronic systems, particularly digital and embedded systems. Mr. Stepan has extensive practical experience in embedded systems, software design (C/C++, JAVA, ADA, Perl, assembly, and other languages), and HDL design (VHDL and Verilog).

Mr. Stepan has experience in root cause failure analysis investigations for a broad range of electrical issues. Products investigated include appliances, consumer electronics, battery systems, power supplies, industrial electrical equipment, medical devices, and military systems. Mr. Stepan also has experience with evaluation, review, FMEA analysis, single point failure analysis, reliability analysis, and safety analysis of electronics and the electronics manufacturing process.

Mr. Stepan additionally has an extensive background working with computer architecture, real-time systems, avionics, process control, configuration control, and electronics manufacturing and design cycles.

Prior to joining Exponent, Mr. Stepan was employed at Northrop Grumman, Navigation Systems Division. His work experience includes lead designer of System Processors for several Inertial Navigation System product lines. This encompassed Digital Card Design, PCB Layout, Signal Integrity Analysis, FPGA design and verification, production testing development, managing manufacturing process and configuration control, firmware development, system integration, and design process development. His experience also includes developing System/Subsystem hardware requirements, requirements traceability, and requirements verification and validation.

Academic Credentials and Professional Honors

M.S., Electrical Engineering VLSI Design, University of Southern California, 2003

B.S., Electrical Engineering with Computer Engineering Specialization, University of California
Los Angeles, 2002

Licenses and Certifications

Registered Professional Electrical Engineer, California, #19170

Publications

Slee D, Stepan J, Wei W, Swart J. Introduction to printed circuit board failures. Proceedings, IEEE Symposium on Product Compliance Engineering, October 2009.

Project Experience

Electrical failure analysis of appliances, consumer electronics, battery systems, power supplies, medical devices, and military electronics.

Industrial equipment electrical failure analysis, including generators, motors, transformers, control systems, automation systems, and elevators.

Battery-pack testing and failure analysis of lithium ion cells and other cell chemistries.

Fire investigations involving electrical wiring, components, devices, and appliances.

Marine electrical systems failure analysis.

Automobile electronics systems failure analysis.

Electronics architecture design, hardware design, analysis, review, reliability, FMEA, evaluation, and new design bring-up support.

Software architecture design, code design, analysis, and review.

IP infringement cases involving computer and electronics hardware and software.

Evaluation and design review of appliances, consumer electronics, battery systems, power supplies, medical devices, and military electronics.

Evaluation of electric distribution systems of buildings.

Counterfeit integrated circuit identification.

Professional Affiliations

- IEEE Institute of Electrical and Electronics Engineers (member)