



Jerry Stepan, P.E., CFEI

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PROFESSIONAL PROFILE

Jerry Stepan has over 17 years of forensic engineering experience related to electrical engineering and computer science matters. He specializes in electronics systems and electrical systems. He has a strong background in digital and embedded systems with experience designing and debugging hardware and software/firmware. Jerry also has broad experience covering electronics, Li-ion battery systems, power generation and distribution, industrial controls, software, and electrical fires.

POSITIONS

Brillouin Consulting
Principal

Los Angeles Area, CA
Mar 2025 - Present

Lead expert in electrical, electrical systems and fire origin and cause matters. Substantial litigation experience in root cause analysis. Experience includes the evaluation, review, FMEW analysis, single point failure analysis, reliability analysis, and safety analysis of electronics and the manufacturing process.

Exponent
Senior Managing Engineer

Los Angeles, CA
Oct 2007 - Mar 2025

Specialized in Li-ion battery systems, electronics systems and electrical systems. Experience included computer architecture microprocessors, digital logic, analog circuits, sensor integration, power conversion, reliability, safety, and manufacturing. Worked with consumer electronics, automotive electronics, biomedical devices, avionics, and controls. Also experienced in investigating equipment failures related to power generation and distribution, including issues related to transformers, breakers, gas turbines, solar, transmission and distribution circuits, as well as other utility power generations and distribution systems. Also experienced in investigating fires involving electrical systems, solar, electronics, appliances, and/or batteries.

Northrop Grumman
Digital Design Engineer

Woodland Hills, CA
May 2003 - Sep 2007

Lead Digital Design Engineer responsible for the full design cycle in developing several system processor cards from concept to production. System processor cards process and compute navigation sensor data and interface with various aircraft I/O (military fixed and rotary wing aircraft). Personal designs used on all major aircraft navigation product lines within Northrop Grumman's Navigation Systems Division.

Sun Microsystems
Hardware Engineering

Newark, NJ
Jun 2002 - Sep 2002

Electrical Design, Microarchitecture, Component Engineering, Testing, Hardware Design, Communication Protocols.

Palm
Hardware Engineering

Santa Clara, CA
Jun 2000 - Sep 2001

Electrical Design, Component Engineering, Testing, Communication Protocols.

Globalstar
Electrical Engineering

San Jose, CA
Jun 1999 - Sep 1999

ACADEMIC CREDENTIALS

University of Southern California
Master of Science, Electrical Engineering

Los Angeles, CA
2003

University of California, Los Angeles
Bachelor of Science, Electrical Engineering & Computer Science

Los Angeles, CA
2002

LICENCES & CERTIFICATIONS

- Professional Engineer, Electrical, CA (19170)
- Professional Engineer, Electrical, NV (23078)
- Certified Fire & Explosion Investigator (CFEI)

PROFESSIONAL AFFILIATIONS

- IEEE Institute of Electrical and Electronics Engineers (member)
- NFPA National Fire Protection Association
- NAFI National Association of Fire Investigators

PUBLICATIONS

- Swart J, Gamos-Ramos R, Stepan J. Propagating Circuit Board Failures and Product Fires . International Symposium on Fire Investigation Science and Technology (ISFI), Orlando, Florida, 2024.
- Ibrahim Z, Stepan J, Slee D, Reza A. Forensic examination, and failure analysis of a 220 MV step-up transformer fire. Proceedings, ASME International Mechanical Engineering Convention & Exposition 2013, San Diego CA, November 15-21, 2013.
- Turner GG, Stepan J, Mikolajczak CJ. Safety considerations when designing portable electronics with electric double-layer capacitors (supercapacitors). Proceedings, 2011 IEEE Symposium on Product Compliance Engineering, Product Safety Engineering Society, October 2011.
- Slee D, Stepan J, Wei W, Swart J. Introduction to printed circuit board failures. Proceedings, IEEE Symposium on Product Compliance Engineering, October 2009.

ADDITIONAL

- Jerry has a strong background in digital and embedded systems with experience designing and debugging hardware and software/firmware. Jerry's embedded systems experience includes computer architecture microprocessors, digital logic, software/firmware, analog circuits, sensor integration, power conversion, reliability, safety, and manufacturing. He has extensive experience working with consumer electronics, automotive electronics, biomedical devices, avionics, aerospace, and controls.
- Jerry's embedded systems experience includes computer architecture microprocessors, digital logic, analog circuits, sensor integration, power conversion, reliability, safety, and manufacturing. He has extensive experience working with consumer electronics, automotive electronics, biomedical devices, avionics, and controls. He also has experience investigating software issues for a wide variety of products and systems and has evaluated code for a range of computer systems including online (MMO) game, military navigation and control systems, computer BIOS, medical devices, and hard drive controllers.
- Jerry specializes in electronics systems and electrical systems. He has a strong background in digital and embedded systems with experience designing and debugging hardware and software/firmware. Mr. Stepan's embedded systems experience includes computer architecture microprocessors, digital logic, analog circuits, sensor integration, power conversion, reliability, safety, and manufacturing. He has extensive experience working with consumer electronics, automotive electronics, biomedical devices, avionics, and controls.

- Jerry also has a vast background in Li-ion battery systems specializing in battery protection and management. His experience includes performing Li-ion battery design reviews and investigating Li-ion battery failures involving consumer electronics, Internet of Things (IOT), biomedical devices, micromobility devices, electric vehicles (EVs), and grid scale Battery Energy Storage Systems (BESS).
- Jerry has broad experience in investigating equipment failures related to power generation and distribution. He has investigated issues relating to transformers, breakers, gas turbines, solar, transmission and distribution circuits, as well as other utility power generations and distribution systems.
- Jerry has considerable experience evaluating and investigating industrial controls involving industrial accidents and system failures. He has investigated accidents at many SCADA controlled industrial manufacturing plants.
- Jerry has over 17 years of experience investigating fires involving electrical systems, solar, electronics, appliances, and/or batteries.
- Jerry 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. He also has experience with evaluation, review, FMEA analysis, single point failure analysis, reliability analysis, and safety analysis of electronics and the electronics manufacturing process.