

# Christopher J. Lavan

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*Multi-disciplined engineer with over 17 years of experience in product development and manufacturing.  
Skilled in leading cross-functional teams and ensuring on-time delivery of high-quality products.  
Proficient in developing, testing, and implementing new technologies with a focus on embedded solutions.  
Strong communicator and problem-solver with a track record of delivering successful projects.*

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## Work Experience

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### Goldfinger Monitors

Sept 2023 - Present

#### Engineering & Product Manager

- » Lead a team of 10 engineers and technicians to develop and manufacture new touchscreen monitor products from concept to mass production.
- » Serve as the primary technical point of contact for customers, ensuring their needs are met and expectations exceeded, making essential product data readily available, automating processes wherever possible.
- » Oversee development and integration of IT solutions to organize and maintain comprehensive documentation of the company's extensive product portfolio, which included POS systems, card readers, game boards, and logic boxes.
- » Handle all marketing efforts from designing the website and trade show materials to creating high-quality brochure spec sheets to support sales.
- » **Custom Monitor Builds** – Engaged directly with customers to gather requirements, establish budgets, and define project deliverables. Organized and ran regular update meetings to keep the timeline on track and address any challenges proactively. Facilitated weekly meetings with our Vietnam manufacturing team, ensuring alignment on production schedules, quality, and prototyping. Developed and implemented systems and processes that standardized and streamlined custom development projects.
- » **Proprietary AD Board** - Developed a bespoke AD board with MediaTek components and a branded on-screen display that allowed total control of the monitor through the touch screen. The result was a more robust, feature-rich product that set a new industry standard for performance and ease of use, giving the company control over its hardware and software for the first time in its 13-year history.
- » **LED Controller** - Offers independent control of six LED strings and supports up to 1200 LEDs. Current limited to 6A per channel and a maximum load of 18A. Features fourteen built-in LED patterns, global brightness control, and compatibility with 5V or 12V string operations. Can be operated using remote or on-board buttons. USB-B and RS-232 interfaces enable communication for custom configurations. Custom UI developed for ease of use.
- » **Marketing** - After separating from their distributor, I stepped up to handle all the company's marketing. From managing the website to designing entire trade show booths, developing monitor wall content, backdrops, banners, as well as spec sheets and sales brochures, ensuring every detail was polished and professional.

## Suntek Synergies

April 2020 – Sept 2023

### Project Engineer

- » Responsible for planning and executing engineering design projects in the development of new medical and veterinary lighting and video products.
- » Oversee and coordinate engineering efforts to ensure on time and on budget deliverables.
- » Provide technical expertise in the design, testing, and implementation of new technologies.
- » **Funk Lights Bactericidal Lights** - Skin and eye safe irradiators (365nm/405nm) used to decontaminate wounds and reduce microbial loads. Managed and oversaw development of high-power, multiwavelength LED COBs (chip-on-board), driver circuits, and thermal management solutions.
- » **Tactical Telehealth System for Combat Medics** - Development for Naval Special Operations Medical Institute (JSOMTC) at Fort Bragg. Helmet mounted, tactical camera/lighting system to integrate with global satellite network and cloud application for medics, techs, and corpsman.

## Sunoptic Technologies

July 2017 – April 2020

### Electrical Engineer

- » Managed and lead large engineering projects for a line of medical video and lighting products.
- » Team lead in design of surgical camera systems and touch screen controllers.
- » Responsible for engineering design, system integration, software development, testing, compliance, and documentation.
- » **Titan HDC-300 Surgical Headlight Camera System** - Project Manager and Lead Electrical Designer for a head mounted, coaxial, camera and lighting system for cardiac surgeons. Integration of remote image sensor, video stabilizer, and recorder. Custom circuit boards designed in Altium. Documentation, testing, and validation for compliance to IEC 60601.
- » **Touch Screen Control Interface for Family of Lighting and Camera Products** - Hardware and software development of Atmel SoC with a custom Yocto OS to interface with a Capacitive Touch HDMI/USB-HID. Backend in C++. GUI Developed in Crank Storyboard and connected with LUA. All low level GPIO handled with bare metal C on an Atmel microprocessor. Custom Atmel SAMA5 CPU and Touch Control boards developed in Altium.

## Drone Aviation Corporation

July 2016 – July 2017

### PCB Designer

- » Senior design engineer responsible for developing electrical solutions for tethered drone applications.
- » Primarily concerned with printed circuit board design and manufacturing with special considerations for weight and efficiency.
- » Circuit design, schematic capture, board layout, procurement, population, testing, and programming – embedded controllers, sensor amplification, current sense, power supplies, battery charging, cell balancing.
- » **DJI Inspire Tether Kit with Backup Battery** - Replacement of the native DJI battery and indefinite flight through tethering the unit. 400V ground power is sent up the tether where it is converted to 24V to power vehicle. PCB designed and manufactured to charge backup battery, OR between power supplies, control and monitor power to vehicle, and emulation of battery for the DJI Battery Management board.
- » **Active Winch Tether System** - Developed for use with the DJI Inspire Tether Kit and other light duty, tethered UAVs. Lightweight, low-cost tether management system for applying constant tension to the tether to keep it out of the props and avoid coiling on the ground. PCB designed for the use of 12-30V 10A motors, brushed DC or stepper, with ethernet capabilities and load cell amplification.

## Jenivox

July 2012 – July 2016

### *Electrical Engineer*

- » Successfully designed and implemented a variety of product and process control systems, primarily focused on electrical design and embedded software development.
- » Responsible for engaging directly with customers to produce and procure engineering proposals, drawings, parts, products, and control systems.
- » **Micro Soldering Manufacturing Process** - Developed for attaching a 50AWG tri-filar wire to a miniature pressure sensor .2mm wide, with traces on the sensor being .06mm apart. Several techniques were employed in the R&D phase including laser welding, hot air, and induction heating, however resistance welding was found to be the most economical and reliable method for attaching the wires.
- » **Voice Coach Biofeedback Bluetooth Device** - Developed using RFD22301, a Bluetooth enabled ARM Cortex M0 Microcontroller, this device constantly polls a pressure transducer, 9 DOF module, and monitors battery voltage, relaying data to a cellular handset, telling the wearer what their body is doing while they're singing.

## Babcock & Wilcox Conversion Services

July 2011 – July 2012

### *Nuclear Test Conductor / System Engineer / Shift Technical Engineer*

- » One of four shift technical engineers responsible for providing leadership and direction to operations management, engineers, operators, and maintenance.
- » Responsible for the safe operation and monitoring of all plant equipment.
- » Design modifications to existing configuration meeting engineering specs and nuclear safety considerations.
- » Revise and approve test instructions, procedures, specs, work control packages, purchase orders etc.
- » **KOH Scrubber pH Probe** - Configuration modified on process plant off-gas scrubber system at Piketon DUF6 Conversion Facility. As found configuration was redesigned to allow for probe calibration/replacement while system is in operation mode. Detailed design package prepared and executed.
- » **Process Off-gas O2 Sensor** - Modification completed at Piketon DUF6 Conversion Facility. As found configuration was determined to be prone to leaks and false positives. Configuration redesigned to allow the instrument to be valved out and calibrated/replaced while equipment is in operation. Detailed design package prepared and executed.

## Infosight Corporation

Dec 2007 – July 2011

### *R&D Engineer*

- » Part of small team of engineers responsible for developing all products, processes, and technology offerings.
- » Circuit design, programming, firmware development, prototyping, and research.
- » Troubleshoot, repair, test, and develop/document test procedures for all printed circuit boards.
- » PLC programming, electrical and minor mechanical design for custom machinery builds.
- » Assist in network administration and maintenance.
- » **Cryogenic Vial Marking** – Process and system developed for the coating and marking of press fit plastic caps with 2D data matrix and serial numbers. Responsible for early stages R&D, assembly, electrical design, panel layout and wiring, and documentation. System implementation, optimization, and maintenance, database management, training of equipment operators.
- » **Biopsy Cassette Coater** - Automated system for the application and curing of ink on biopsy cassettes. Bowl feeders, pad stampers, high voltage UV lights among technologies employed in the coating, curing, and collating process. Fully responsible for all electrical design, PLC programming, documentation and maintenance.

## Education

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### Bachelor of Science in Mechanical Engineering

August 2002-August 2007

*University of Pittsburgh*

Studied Mechanical Design, Mechanical Statics and Dynamics, Fluid and Thermal Dynamics, Heat Transfer, Mechanical Vibrations, Mechanical Measurements, Calculus, Differential Equations, Circuits, Finite Element Analysis, Mathematics, Computer Science, Mechatronics, Physics, Philosophy, and Engineering Management.

## Skills

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**Research and Development** - Embedded Systems and Firmware, Printed Circuit Board (PCB) Design, Analog/Digital Circuit Design, Prototyping, Wiring, Soldering, Application Development, UI/UX Design, Troubleshooting, Testing, and Validation

**Manufacturing** - Industrial Automation and Control, SCADA, PLC, HMI, Sensors, Actuators, Motors, Drives, Instrumentation, Preventative Maintenance and Repair, Regulatory Compliance, Quality Control

**Software** - Windows, Linux, C, C++, C#, Python, HTML/CSS, SQL, PHP, Javascript, Git, MATLAB, Visual Studio

**Electrical Design Tools** - Altium, Eagle, Cadence Allegro/OrCAD, PIC, ST microcontrollers, STMCube32IDE, Atmel AVR/ARM microcontrollers, MPLab, Atmel Studio, Verilog, VHDL, FPGA, SOC, ASIC

**Mechanical Design Tools** - Solidworks, Fusion 360, AutoCAD

## References

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**Available on request pending an offer.**

I am happy to provide stellar references upon request, pending a serious offer, as I want to ensure my references are not burdened with numerous calls. However, I am confident that they will attest to my professional strengths and contributions. Namely, that my workload consistently exceeds the average, and I maintain an exceptional standard of quality in my work. My performance and abilities are recognized as excellent, and I demonstrate a high level of initiative, cooperation, and clear communication. My attendance and reliability are impeccable, and I am known for being personable, with a positive attitude that makes me a pleasure to work with. My key strengths include extensive engineering knowledge and experience, creative problem-solving, and a dedicated sense of urgency in all projects.