Curriculum Vitae Dr. Saad Ahmed

Principal Engineer

Authorized to work in the US
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Dynamic and results-driven Senior Electrical Engineer with over 30 years of experience in electronics design and executive-level engineering leadership. Proven track record in product innovation, strategic planning, and building high-performing engineering teams. Adept at leading cross-functional initiatives with deep expertise in PCB-level analog/digital hardware design, firmware/software development, optical systems, and mechanical design. Recognized for leading by example and driving excellence across multidisciplinary engineering domains.

CAREER HIGHLIGHTS

- **Delivered 50+ Custom PCB Designs** Sole PCB/Firmware Engineer for a laser-based metal 3D printing system, producing over 50 custom PCBs in 2 years. Designs supported optical alignment, PLC interface/control, analog/digital MCU-based systems, power supplies, and signal conditioning/distribution. Personally designed, assembled, and programmed complex SMD and through-hole PCBs in-house for rapid prototyping and deployment.
- **Built and Led Multidisciplinary Engineering Team** Founded and managed a cross-functional engineering team to deliver both customer-driven and internal products that became core offerings. Played a key role in executive leadership to define strategic objectives, technology roadmaps, and R&D focus areas. Oversaw full product lifecycle from concept to production.
- **Innovated Smart Camera Platform** Conceived and developed a Smart Camera from concept to production, integrating mechanical, electronic, and software components. The product introduced novel design principles, reshaped company direction, and remains a flagship innovation.
- **Pioneered Printed Electronics Solutions** Spearheaded the design of new products targeting the emerging printed electronics market. Contributed directly to marketing strategy, patent development, and technical publications.
- **Led $1M Capital Equipment Project** Managed the end-to-end development and deployment of a $1M custom capital equipment system. Delivered the project on time (under 1 year) and within budget, coordinating a team of multidisciplinary engineers and technicians.

WORK EXPERIENCE

Seurat Technologies – Wilmington, MA *Principal Electrical Engineer* | Jan 2022 – Present

- Sole developer of full-cycle PCB solutions for microcontroller-based automated laser alignment systems.
- Designed critical PCB architectures and characterized optical elements for high-power laser platforms.
- Currently developing proprietary driver solutions for laser-based metal 3D printing optics.
- Managed end-to-end engineering: specifications, architecture, schematic capture, component selection, layout, procurement, assembly, testing, programming, and deployment.
- Collaborated cross-functionally with Laser, Electro-Optic, Process, and Mechanical teams to integrate systems.

Xenon Corporation – Wilmington, MA *VP of R&D and Engineering* | Sept 2010 – Jan 2022

- Led a multidisciplinary engineering team in a fast-paced, innovation-driven environment.
- Directed product development strategy, market exploration, and customer engagement.
- Created project plans, concept models, and system architectures aligned with business goals.
- Developed IP portfolio and marketing collateral; represented company at trade shows and conferences.

- Partnered with sales and executive leadership to align engineering with customer needs.
- Founded and scaled the engineering department from scratch, building capabilities in electrical, mechanical, software, and optical design.
- Defined tools, instrumentation, and workflows for efficient operations.
- Delivered technical proposals and presentations to clients and industry audiences.
- Spearheaded product conceptualization and prototyping.
- Hands-on experience with PCB design (KiCAD), electromechanical modeling (SolidWorks), firmware (AVR, PIC), and Windows applications (Visual Studio).
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Dalsa (now Teledyne) – Billerica, MA *Project Leader* | Mar 2001 – Sept 2010

- Led development of industrial vision product lines from concept to production.
- Oversaw proposals, specifications, CAD modeling, task scheduling, and documentation.
- Coordinated cross-functional teams and managed project timelines and deliverables.
- Engineered systems using microprocessors, Gigabit Ethernet, PCI, FPGA (Xilinx), switching power supplies, and high-speed analog/digital circuitry.
- Designed thermal and EMI solutions for robust industrial applications.
- Created mechanical components using SolidWorks and generated manufacturing-ready CAD drawings.

Innovation TK – Hartford, UK *Design Engineer* | Jan 1998 – Mar 2001

- Developed high-definition broadcast equipment for film-to-video transfer (Telecine systems).
- Designed electronics for frame store and system controller using BLVDS, LVDS, SDRAM, PCI/ISA, and embedded microcontrollers.
- Created motion control systems using ADSP401 DSPs; PCB design with Protel98 (Altium).

Orbis Technologies – Banbury, UK *Design Engineer* | Jan 1996 – Jan 1998

- Designed optical color processing instrumentation for semiconductor applications.
- Led development of PC-based color processing cards with Xilinx FPGA logic.
- Programmed embedded C++ controllers and developed Visual Basic host interfaces.

ACADEMIC BACKGROUND

The University of Liverpool, Dept of Electrical Engineering and Electronics. Liverpool UK

PhD Oct 1991-May 1995. Title: Intelligent 3D Chromatic Metrology. Used software AI algorithm for real-time Image processing of Semiconductor Process.

MSc Sept 1989 to March 1991 1 Year by research Thesis Title: Fiber optic Axle Detection. Developed fiber optic sensors based on micro-bending embedded into roads for axle detection and weighing.

BEng (Hons). Oct 1986 -June 1989 Major in Electronics

PATENTS AND PUBLICATIONS

Patents

Ultraviolet treatment of food products to kill microorganisms while retaining fruit bloom (10959441 B2)

Reflector for providing uniform light energy (10865959 B2)

Protecting a UV-transmissive window (10634555)

Protecting a UV-transmissive window (#10634555)

Circuit for flash lamp (#US 9326365 B2)

Publications

Advances in Intense Pulse Light Solutions for Display Manufacturing

https://businessdocbox.com/Metals/73462454-Advances-in-intense-pulsed-light-solutions-for-displaymanufacturing-xenon-corporation-dr-saad-ahmed-japan-idw-2016.html, June 2016

Low Temperature Photonic Sintering For Printed Electronics,

https://xenoncorp.com/wp-content/uploads/2019/10/Low-Temperature-Sintering-for-PE-2012.pdf Sept 2012

Shaped Pulse Profile in Photonic Sintering for Printed Electronics

https://xenoncorp.com/wpcontent/uploads/2019/11/Shaped_Pulse_Profiles_in_Photonic_Sintering_for_Printed_Electronics.pdf 2014Specialist Printing Worldwide Issue 3

Xenon S500 Offers Large Scale R2R PE Sintering http://xenoncorp.com November 2013

Intelligent Remote Chromatic Processing October 1994 PhD Thesis. University Of Liverpool.

Remote Sensing Using Neural Networks September 1993 S. Ahmed P. Russell P. Lisboa G.R Jones Workshop on Neural Networks Techniques & Applications

Chromatic Modulation of Optical Fiber Sensing Electromagnetic and Speckle Noise Analysis, 1992 S Smith, S Ahmed A Vourdas, J Spencer, P Russell G.R Jones Journal of Modern Optics 1992 Vol 39 no 11 2301-2314

Intrinsic Optical Fiber Sensing for Axle Detection 1991 S. Ahmed, Traffic Engineering and Control, Nov 1991 pp 527-53