

Jacob W. Scarpaci

PROFESSIONAL SUMMARY User-Centric Product Design | Building Effective Teams | Multi-Disciplinary Leadership

Engineering leader with 20 years of experience across the full design cycle, from user needs to regulatory clearance and scaled manufacturing. Shipped medical devices used in homes around the world, built and led a systems architecture organization at the scale of Amazon Robotics, and helped students in 157 countries compete in robotics for the first time. Led complex multi-year programs with external partners and directed departments of 140+ people across product portfolios. Brings the experience to solve the hardest product problems by defining the right requirements and building the teams and systems to deliver.

WORK EXPERIENCE

Amazon Robotics · North Reading, MA

Senior Manager, Systems Architecture Jan 2022 – Jan 2026

Grew and led a centralized team of 20+ interdisciplinary systems architects and contractors, delivering complex, integrated robotics and software across a portfolio of 10+ fulfillment automation systems.

- Reduced integration rework by building shared SE mechanisms, including concept-of-operations, KPI models, data standards, and user-validation frameworks adopted across the portfolio.
- Resolved complex cross-workcell integration and interaction design problems by embedding architects on program teams and working across Product, UX, HW/SW Engineering, QA, Operations, and Product Launch.
- Hired, coached, and developed high-performing technical leaders, maximizing their impact and visibility to executive leadership through technical papers, presentations, and prioritizing high-impact work.

Minim · Manchester, NH

Senior VP of Product and Hardware Engineering Sep 2020 – Jan 2022

Led development of Motorola-branded cable modems and WiFi routers, including defining hardware strategy and product roadmaps. Restructured the engineering organization post-merger with Zoom Telephonics.

- Drove a full redesign and launched a mesh router system to compete with Eero and Google Home, including new industrial design, packaging, and electronics and antenna layout at the contract manufacturer.
- Used trade-space analysis of market and technology inputs to prioritize the hardware roadmap by ROI and navigate two COVID-era supply chain crises, determining which products to sustain, recertify, or sunset.
- Brought firmware development in-house to gain direct control over security and network-management features and respond faster to product issues.

DEKA Research and Development · Manchester, NH

Engineering Director, Verification & Validation Jul 2017 – Sep 2020

Reorganized and directed a 140+ person department of managers, engineers, and technicians responsible for verification and validation (V&V) of all DEKA products, from insulin patch pumps to stair-climbing wheelchairs.

- Restructured the department to scale, establishing performance frameworks, formal career pathing, and structured mentorship that grew the next generation of test managers and team leads.
- Authored company-wide SOPs and standardized the verification workflows and tooling, cutting onboarding time and increasing resource flexibility across project teams.
- Served as final technical authority approving project phase transitions, including FDA regulatory submissions, clinical field releases, and human-use validation studies.

Program Manager, Medical Device Development Feb 2012 – Jul 2017

Directed a 50+ person team through full development, FDA 510(k) and PMDA clearance, and launch of the AMIA (US/Canada) and Kaguya (Japan) Class II nocturnal home peritoneal dialysis systems.

- Owned the program plan, organization, and budget through a multi-year lifecycle spanning design, risk analysis, V&V, regulatory submissions, and manufacturing transfer.
- Managed the Baxter partnership, aligning leadership and bridging their functional teams to drive the program through development and commercial launch across domestic and international markets.
- Delivered a complete educational robotics kit, software platform, and competition field system for the inaugural FIRST Global Challenge, supporting 157 national teams in Washington, DC.

Lead Systems Engineer, Medical Device Development Oct 2006 – Jul 2017

Built and led a multidisciplinary technical team developing a Class II peritoneal dialysis system through concept, architecture, requirements, V&V, regulatory submissions, and manufacturing handoff and scale-up.

- Owned translation of customer inputs into product and systems requirements, system architecture, subsystem decompositions and interfaces, and core fluid-handling design.
- Owned system-level risk management per ISO 14971, including system DFMEAs and PFMEAs.
- Led user studies (US and Japan) to perform use-error analysis per IEC 62366.
- Named co-inventor on 10+ issued patents spanning fluid handling, optical sensing, and device design.

Boston University Binaural Hearing Lab · Boston, MA

Ph.D. Research Assistant Aug 2001 – Sep 2006

Engineered real-time virtual acoustic space system and researched human perception of dynamic cues.

CONTACT

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PRODUCT SECTORS

- Medical Devices
 - Peritoneal Dialysis
 - Insulin Infusion Pump
 - Hemodialysis
 - Mobility Devices
- Consumer Electronics
- Warehouse Automation
- Educational Robotics Kits

LEADERSHIP SKILLS

- Organization Building (140+)
- Hiring, Mentorship & Talent Development
- Cross-Functional Leadership
- Program Management
- Agile Software Development
- Stakeholder Management
- Budgeting & Resource Planning
- Program Risk Management
- Building Engineering Mechanisms
- Technical Communication
- Executive Communication
- Ownership
- Earning Trust

TECHNICAL SKILLS

- Product Management
- Hardware Engineering
- Product Design
- Systems Engineering
- Tradespace Analysis
- KPIs & Metrics Management
- Systems Architecture & Decomposition
- Requirements Management
- Verification & Validation (V&V)
- User Experience (UX)
- Human Factors
- Risk Management - ISO 14971
- DFMEA, PFMEA, UFMEA
- FDA Regulatory Submissions - 510(k)
- AI Augmented Workflows

EDUCATION

Ph.D. Biomedical Engineering
Boston University (2006)
B.S. Electrical Engineering
University of Cincinnati (2001)