

## RESUME OF DAVID MAIN

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### **What I Seek**

I seek a position as VP of Engineering, CTO, Director of Engineering/Technology, or Principal Architect in a stable organization that is technically interesting, has high integrity, is filled with excellent people and seeks my attributes and breadth of experience.

### **Profile**

- Core tech experience: video, FPGA, sensors, analog/digital signal processing, power
- Personal style: practical, productive, excellence, solutions, innovation, goal driven
- Specialty: I am an engineering generalist in analog, digital, hardware, logic, firmware, ASIC
- Target market experience: (in order) commercial, consumer, medical , military
- Project management: many projects with multi-discipline and cross-department content
- Project planning: defining projects as a core team member and working independently
- Group management: Manager and Director level of engineering groups (3 to 30 members)
- Corporate hierarchy experience: Senior Staff in numerous companies
- Product planning: customer driven and technology driven road-mapping and specification
- Negotiations: employment offers and contracts with suppliers, outsource services, customers
- International experience: vendors, manufacturers, and customers

### **Experience**

- *Director of Engineering, Element Labs Inc., Apr. 2006 to Apr. 2007*

Primary product: LED based entertainment and architectural video display and signage.

I joined when the company when it was a three year old aggressive startup. I was a member of the senior management team and a major contributor to establishment of an R & D facility in Silicon Valley. I contributed to all facets of infrastructure definition and implementation, including facility setup, engineering staff and middle management (Director peers) hiring, defining the product development process, legacy product technical support, defining a future product technology roadmap, the hands on design of the initial networking and control products, management functions of the engineering department (8 staff + multiple consultants), intellectual property generation (sole or partial author of multiple patent applications), mentoring of junior engineering staff, and negotiation of contracts. I architecturally defined and launched development of an ASIC with significant improvements over commercially available LED driver devices.

- *Director of Engineering, Leapfrog Enterprises, Jan. 2005 to Apr. 2006*

Primary product: High technology educational consumer products (toys) for children.

I was the sixth Director of Hardware Engineering at the \$700M/year company. I was responsible for Director level activities of international product development, manufacturing support, and new product definition. My responsibilities included project and engineering resource scheduling, department budget management, department staffing, technology investigation and review, product design review, contract negotiations with vendors (> \$1M), engineering representation in video product core group, and travel to contract manufacturing facilities in China to resolve production issues. High technology consumer products require extremely efficient and cost effective designs plus high yield in the manufacturing process. My multi-disciplined technical experience was fully used to assure that new products such as the L-Max, Fly "pen top computer", and Little Leaps DVD player controller were optimized for value and designed with "worst case tolerance" for high manufacturing yield.

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- *Director of Commercial Imaging, Intevac, Apr. 2003 to Nov. 2004*

Primary product: Intensified imaging cameras for commercial, medical, military, and research, markets.

I started as a design engineer and as my engineering and project management skills were revealed I progressed over the next year to Engineering Manager and then Director. During this time I defined a superior architecture for the company's imaging electronics and signal processing methods. This resulted in the creation of a series of highly integrated camera products that were smaller, lower power, less expensive, and dramatically superior in performance to what the company previously had. The design was featured in the Altera corporate presentation and I was interviewed numerous times in the trade press. I did the hardware design, the programmable logic design, and developed numerous systolic signal processing algorithms for improving the video images. As Manager and then Director I assumed responsibility for department staffing and built the department from 3 engineers to 7 plus multiple consultants. I also negotiated outsourced services contracts, drafted engineering contribution to customer proposals, evaluated new technology, managed projects, performed engineering design reviews, gave engineering mentoring to the junior staff, and provided inter-department coordination. From time to time I would continue to make design engineering contributions when the staff needed assistance due to scheduling pressure or to solve difficult problems.

- *Consulting Design Engineer, Mainnovation Inc., Jan. 1979 to Jan. 2003*

Primary product: general product engineering consulting.

I worked as a self employed engineering consultant. I had diverse clients and worked on a variety of contract models including fixed price, time and materials, per diem, and joint venture. I had many repeat clients due to their satisfaction with my focus on problem solving, my generality of skills allowing them to deal with a single person, my ability to optimize solutions for their problems by balancing analog + digital + programmable logic + software technologies, my comfort with physics as it might relate to their product, my quality of work, my cost effectiveness, and my integrity as a businessman. I typically worked independently and off site at my lab facility but sometimes I also worked as a member of client's internal engineering teams. My personal inclination as a generalist by nature plus the cost, efficiency, and convenience benefits of not having to sub-contract portions of a job to other contractors caused me over time to expand my skill set until I could do most jobs without sub-contracting any tasks. Fixed price contracts motivated me to develop my characteristics of practicality, cost effectiveness, time efficiency, risk control, schedule management, and careful negotiation.

- *Additional experience. Details available on request.*

- ✓ Magazine Columnist, Multimedia System Design Magazine
- ✓ Research Engineer, The 3DO Company
- ✓ Director of Engineering (acting), Hasbro Electronics
- ✓ Design Engineer, ADDA Corporation
- ✓ Design Engineer, Consolidated Video Systems
- ✓ Design Engineer, Meadows Games Inc.

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### **Engineering Skills**

- Technical advisor: Explain technology to customer, marketing and sales, management.
- Specification: draft MRD/PRD and objective specification that solves the problem.
- System architect: End to End topology, principle components, standard selection, etc.
- Interface design: proprietary definitions of protocols, data types, physical layers, etc.
- Build/Buy, outsource decisions: define tasks and schedule that match project context.
- Algorithm design: design the processes which will execute problem solutions.
- Simulation: prototyping on a computer to improve performance, reduce schedule.
- Hardware design: PCB level design, schematics and BOM through product release.
- Digital design: low power through extreme speed, simple through high performance.
- Analog design: audio, video, PLL, power supply, filters, oscillators, (some) RF, etc.
- Programmable logic: PLD through FPGA logic design, capture, simulation, debug.
- Firmware: real time (interrupt driven) microcontroller C or ASM code development.
- ASIC specification: architect, define functionality and performance, (some) design.
- Communications: Standard compliant and proprietary signaling (RS232 to 100BaseT).
- Design review: conduct meaningful "no holds barred" assessment of design quality.
- System integration: bringing system elements together and making them work.
- Documentation: generation of documents to support released designs.
- Compliance and Manufacturing support: EMC testing, test procedures, Q&A support.

### **PC Application Skills**

- Office: Word, Excel, Power Point, Visio, Outlook, Acrobat, Internet Explorer, Firefox
- Planners: Microsoft Project
- Simulators: PSPICE, MathCad, SwitcherCAD, VirtualSpice, Electronic Workbench, Derive
- CAD: OrCad, Quartus, MPLAB, (some) AutoCAD
- Compilers: C++ Builder, Visual C++, (some) Visual Basic, (some) MS Assembler

### **Education**

- BSEE, California Polytechnic State University, San Luis Obispo, CA
- continued technical course work from time to time to remain current in my field

### **Patents (issued & applied for)**

- Multiple applications assigned to Element Labs and Leapfrog, confidential per agreement
- "Thermo-optic switch having fast rise-time"
- "Multiple Function Birth Assistance Appliance"
- "Multi-Phase Filter Digital to Analog Converter"
- "Method and apparatus for gamma correction by mapping, transforming and de-mapping"
- "Amplitude Adaptive Filter"
- "Improved Method and Apparatus for Digital Multiplication Based on Sums and Differences of Finite Sets of Powers of Two"
- "Method and Apparatus for Collecting Data from Vending Machines"

### **Travel**

- Business: USA, China, Japan, Hong Kong, Korea, Taiwan
- Personal: Brazil, Mexico, all continental USA + Hawaii, Canada, Europe west of Austria, all British Isles, Morocco, Tahiti, and Belize