FRANK R. KOPERDA

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Objective:

Senior level position in system design.

Education:

BA Physics, BA Chemistry	State University of New York	Plattsburgh, NY	1974
M.E., Computer Engineering	Case-Western Reserve University	Cleveland, OH	1976

Skills:

For 17 years I have enjoyed participating in the design and development of leading-edge products. I have used these multi-disciplined skills in the inception, development and production of many advanced products. I have been in a lead position and have been involved with technology selection, product specifications, staffing, management briefings, and inter-company agreements.

- Communications: Telephony, wireless, system design, protocol stacks
- Engineering: VLSI, digital, analog, RF, system, and card design
- Software: Communications, DSP, operating systems, compilers, applications
- Multimedia: MPEG-2, IEEE 802.5, Fibre Channel, ATM, BBNS
- Standards/Forums: IEEE 802, ANSI X3T9, T1A1, WINForum, USNC Study Group C
- Three U.S. Patents, 11 External Publications, many IBM Proprietary reports

Communications Architecture Experience:

- Communication stacks: TCP/IP, APPN, BBNS, AnyNet
- Communication Protocols: ATM, Frame Relay, X.25, Fibre Channel, FDDI, HIPPI, LANs
- Multimedia End Nodes (MPEG-2, Video teleconferencing, Interactive TV)
- Standards Representation: IEEE 802.11 (Wireless), IEEE 802.14 (Cable TV), ANSI X3T9.3 (Fibre Channel), ANSI T1A1.5 (Video Conference Coding and Performance), ITU Study Group 15 (Multimedia Services)

Software Experience:

- System design: function partitioning, code sizing, testing, problem determination, product support
- Systems programming: operating system design , device drivers, compilers, communications
- Device control: disk controllers, DSP, printers, data acquisition, speech recognition
- Assembler languages: 80x86, 8051, 680x0, 680X, TMS320, Series/1, PDP/11, IBM 370
- High level languages: C, C++, PASCAL, BASIC, REX, COBOL, FORTRAN, ALGOL

Hardware Experience:

- System design: function partitioning, fault tolerance, cooling, power systems, safety, servicing
- Product design: 2 Gb/s communications concentrator, workstations, printers
- Digital: VLSI design and simulation, card design and manufacture, high speed
- Analog: Transducers interfaces, preamplifiers, power amplifiers
- RF design (holder of First Class Radiotelephone and Technician Class Amateur licenses)

IBM Employment:

- **(1990 - Present) Communications Architecture:**
  Modified Fibre Channel Standard (ANSI X3T9.3) to allow multimedia packets using Q.2931
  Modified MPEG-2 DSMCC protocol to allow more flexibility
  Designed wireless protocols and worked with IEEE, created industry association, lobbied FCC
  Writing LAN Access Agent for BBNS (ATM network)

- **(1989 - 1990) Communications Concentrator:**
  Hardware project lead of 2 Gb/s fast packet switch
  Switch had SONET, T1, T3, HiPPI, RVX, LAN, FDDI, X.25 links
  Received patents for design to multicast packets through network

- **(1986 - 1989) 3471 / 3476 Terminal:**
  VLSI design of integrated micro, CRT ctlr, keyboard cntrl, 1.5 mb/s com link
  Programming to recognize brain waves for control of CRT cursor
  Programming to recognize facial muscle movement for control of PC

- **(1984 - 1986) 3472/Infowindow: (first IBM multimedia terminal)**
  Design of PC card to attach to phone line, record & playback speech, speech recognition
  Programming of speech recognition (parameter extraction, word boundary, template matching)
  Application programming

- **(1983 - 1984) Integrated Telephone/Terminal:**
  Project lead and programming of SNA type 2 terminal emulation
  Communications programming of SDLC and BISYNC
  Application programming

- **(1982 - 1983) PBX Advanced Call Processing: (first IBM PBX)**
  Software design of advanced call processing using Series/1 attached to PBX
  Project lead and programming of custom operating system for PC attaching to PBX

- **(1980 - 1982) 4975 Printer: (first IBM desktop printers)**
  Card design of microprocessor based printer including power drivers for printhead and motors
  Programming of motor control, printhead control and BISYNC communications using 8085
  Design of new technique for determining printhead position using magnetic delays

- **(1979 - 1980) System/23: (first IBM desktop computer)**
  Hardware design and programming of floppy disk subsystem
  Standardization within IBM of diskette information formats
  Concept and design of first IBM PC (68000 based)

- **(1977 - 1979) Series/1: (first IBM minicomputer)**
  Hardware design and programming of I/O card for hard disk drive
  Hardware design and programming for magnetic bubble and CCD storage
  Operating System programming

Patents / Publications:

J.H. Derby, J.E. Drake, J.G. Dudley, E.A. Hervatic, F.J. Janniello, M.A. Kaplan, B.A. Kesner, F.R. Koperda, M.L. Peters, K.H. Potter, A.L. Tsigler
Mechanism Allowing for Varying Levels of Function Distribution
Patent Filing, Docket RA991048, November 1992

I. Cidon, D.W. Davenport, J.H. Derby, J.E. Drake, I.S. Gopal, J.P. Janniello, M.A., Kaplan, F.R. Koperda, S. Kutten, K.H. Potter
Methods and Apparatus for Routing Packets in Packet Transmission Networks
Patent 5309433, May 1994

J.D. Dixon, R.H. Farrell, F.R. Koperda
Serial Storage Interface Apparatus for Coupling a Serial Storage Mechanism to a Data Processor Input/Output Bus
Patent 4344132, August 1982

A.L. Bond, D.W. Davenport, F.R. Koperda.
Mechanism for Non-Disruptive Dynamic Testing of a Communications Network
IBM Technical Disclosure Bulletin, Vol 34 No 7A, pages 239-240 December 1991

F.R. Koperda, D.K. Popken
Automatic Compensation of Skin Conductance in Electromyographic Sensing,
IBM Technical Disclosure Bulletin, Vol 34 No 4B, pages 124-126 September 1991

F.R. Koperda, ***Extraction of the Electric Fields of the Brain in a Noisy Environment***,
IBM Technical Disclosure Bulletin, V32: No 7. 1989.

R.A. Schulz, F.R. Koperda, ***Position Determination Using Pulse Delays,***
IBM Technical Disclosure Bulletin, V27:2385, 1984.

F.R. Koperda, ***Ultrasonic Position Locator,***
IBM Technical Disclosure Bulletin, V27:1670, 1984.

F.R. Koperda
Voice Recognition
The McGraw-Hill Computer Handbook, pp 30.1 - 30.24, McGraw-Hill 1983.

F.R. Koperda
Absolute Position Detection in Printers
IBM Technical Disclosure Bulletin, V25:4673, 1983.

F.R. Koperda
Voice Recognition
Microprocessor Applications Handbook, pp 14.1, McGraw-Hill 1982.

J.D. Dixon, R.F. Farrel, F.R. Koperda, G.U. Merckel
Parity Mechanism for Detecting both Address and Data Errors
IBM Technical Disclosure Bulletin, V24:794, 1981.

F.R. Koperda
Magnetic Bubble and Charge Coupled Devices, Power-up andResynchronization
IBM Technical Disclosure Bulletin, V22:450, 1979.

F.R. Koperda, F.I. Parke
Interactive Design of Visual Aids
Proceedings 1977 Annual Conference, Association for Computing Machinery, pp 434, 1977