Dr. Pál Verebély PhD

Curriculum Vitae

Personal & Contact Information

First Name: Pál Ottó
Last name: Verebély
Gender: man
Date of Birth: 1st April 1947
Nationality/Citizenship: Hungarian
Family status: divorced, in partnership,
3 children (45,43,42), 3 grandsons (19,14,12)
Languages: Hungarian, German, English (advanced level);
Russian, French (intermediate level)
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Personal interests: music, readings, history, gardening, cooking, travel, children & grandchildren

Studies

-Elementary School: Budapest, 1953 - 1961
-Gymnasium: Budapest, 1961 - 1965
-Military: 1965 - 1966
-University: Budapest Technical University, Faculty of Electrotechnics, Power Electronics
1966 - 1971, with Honors
-Languages: Hungarian, German, English (advanced level);
Russian, French (intermediate level)
-University Doctor Degree (M.Sc.): Budapest Technical University, 1980
-Academic Candidate Degree (more than Ph.D.): Hungarian Academy of Sciences, 1981
-Patents: 14 (partly with other authors)
-Technical Papers: 25 (partly with other authors), in hungarian, english, german, russian

Employments:

Hungarian Academy of Sciences:
-1971 - 1973 Research fellow
Computer and Automation Institute of the Hungarian Academy of Sciences:
-1973 - 1975 Hardware design engineer
-1976 - 1980 Head of department (10 people)
-1980 - 1992 Head of division (48 people)
Brown University (Providence,Rhode Island, USA)
-1975 - 1976: Scientific scholarship with prof. Andries van Dam (computer graphics)
Kontron Elektronik (Eching, Germany):
-1990 - 1992 ESPIRIT Project Manager
INOVIS/INOVIT GmbH (Neufahrn, Germany)
-1992 - 1994 Director of Hardware Development
D.P.V. Ltd. (Budapest, Hungary)
-1991 – 2019 Director
Ingenieurbüro Dr.Paul Verebély (Neufahrn, Germany)
-1990 - 2003 Director
RITA Rt. (Budapest, Hungary)
-1999- 2002 Deputy General Director (in charge of hardware development)
HunTrust Ltd. (Budapest, Hungary)
-2002- 2003 Director
HM EI Rt. (Budapest, Hungary)
-2003- 2004 Engineering Project Manager

Ericsson Telecommunication Hungary (Budapest, Hungary)
-2004- 2011 Hardware System Architect, System Manager (System architecture for telecommunivation equipment)
-2011- 2013 Hardware System Management Section Line Manager
-2013- 2015 Hardware Design Section Line manager
Flextronics International Hungary (Budapest, Hungary)
-2015- 2017 Flex R&D Budapest Site manager (25 – 75 people)
-2017- 2018 Flex Advisor (part time, in pension)
European Union
-2003- 2019 Evaluator of Proposals in several calls
(SME Collective Research, Marie Curie, INTAS, PASR, Eureka, Eurostars Programme, FP6/FP7/FP8/FP9, etc.)
-2004-2005 Hungarian Member of the Second (Advisory) Chamber of the eEurope 2005 Steering Committee

Fields of Activities and Interests:

-Computer Architectures
-Multiprocessor Architectures and Systems
-Network Processors
-Telecommunication
-Voice Processing
-Digital Signal Processing
-Fiber Optic Applications
-High Speed Communications
-Interactive Computer Graphics
-Signal Processor Architectures and Applications
-Network Processor Architectures and Applications
-EPLD/FPGA Designs (Xilinx, Lattice, Altera) and CAD/CAE Tools
-Client/Server Application Systems
-Cryptography and communication security
-Digital Signature
-Encryption Technologies (hardware, software)
-Hardware Crypto Devices
-LAN-LAN Encryption, Cryptorouters
-Contact Smart Card and Smart Card Reader Technologies and Applications
-Contactless Smart Card Technologies and Applications
-Electronic Ticketing for Public Transport Applications using Smart Cards (Contact and Contactless)
-Dual Interface Smart Card Technologies and Applications
-Digital Watermark Technologies
-Certification of Security Products (FIPS-140, ITSec, Common Criteria)
-Real Time Integrated Transaction Authorization
-Intelligent Transport Systems
-GPS
-GSM/GPRS/3G/4G/5G Mobile
-Wireless LAN

Generic description of design & system experiences from industry (with particular focus on market application of R&D results):G

Hardware/Software Know-How
Logic Families
-TTL (LS,ALS,S,F,AS)

-CMOS (HCT,ACT,FCT,ABT)
-ECL100k
Programmable Logic Families
-PAL's (AMD, Texas, MMI)
-GAL's (AMD,Lattice)
-FPGA’s (Xilinx, Altera, Lattice)
-pLSI/ispLSI (Lattice)
Memory Technologies
-SRAM, PBSRAM, SSRAM
-Dual Port SRAM, FIFO
-DRAM, SDRAM
-Rambus DRAM
-EDRAM,
-Video RAM, Tri Port Video RAM
-EPROM, EEPROM, Flash EPROM
-DDR1, 2, 3, 4
-GDDR5
Bus Systems
-SBus (Sun SparcStations)
-MBus (Sun Multiprocessor SparcStations)
-VME Bus
-Multibus II
-Futurebus+
-ISA Bus
-VESA VL-Bus
-PCIBus, X-PCI, Compact PCI
-PCI Express & Switches
-SCSI Bus (including Fast and Wide)
-IDE/ATA
-SAS/SATA
-USB, USB2
-PCMCIA
-Smart Card Interfaces
Processors (CPU, Microcontroller, Coprocessor, DSP)
-Zilog Z80, Z8000
-Intel 80186,-188; 80386EX, 80486DX-2 & DX-4, Pentium,
-Intel Pentium-M, Core 2 Duo, Xeon,
-Intel i3, i5, i7 Server CPUs (Haswell, Broadwell, Skylake, Icelake)
-AMD CPU families
-Intel 8031,8048,8051 (8 bit Microcontroller)
-Cypress EZ-USB
-Intel 960 CA/CF
-ARM processor families
-Intel/DEC StrongARM (SA110/21285, SA1100, SA1110/1111, XScale)
-Intel ixp425 XScale
-Intel PXA255 XScale
-Intel 80200 XScale
-Motorola MC68000,-020,-030,-040,-060
-Motorola MC68302,68360,860 (Communication Processors)
-National HPC46004 (16 bit Microcontroller)
-Texas/Fujitsu SPARC (micro-,super-,hyper-,ultra,-lite)
-Texas TMS320C40 (32 bit Floating Point DSP)

-Texas TMS320C50
-Texas TMS320C6201
-Analog Devices ADSP21161
-IDT Orion Family (R4640, R4650, R5000)
-Hyperstone
-Siemens 80C166/167
-Hitachi SH-3
-Pijnenburg PCC101, PCC201, PCC-ISES, PCC2010
-Power PC architectures

Communication Technologies

-X.25 and ISDN
-Token Ring (Texas TMS380C25, 26,-SRA,-FPA, Music SRT, LANCAM, Pulse Engineering TROLI)
-Ethernet (Intel, National, Broadcom)
-Fast Ethernet (Intel/DEC, National, SMC, SEEQ controllers; National Hub[RIC], Management Interface (RIB), Physical Layer [PHY])
-Gigabit Ethernet
-10G/40G/100G Ethernet
-USB 1.x, 2.x, 3.x
-Ethernet Switches, PHY's (Broadcom, Intel)
-Backplane Ethernet (PICMG 2.16)
-FDDI (National 5- and 2-Chip Set, AMD Supernet2,3, Motorola)
-ATM (Texas, Fujitsu, LSI Logic,National/Transwitch, SUNI Chipsets)
-High speed encryption/decryption (RSA,DSA,Diffie-Hellmann, DES/Triple DES, IDEA, AES, SHA1, MD-5)
-CPU boards for AXD301
-IP Termination Board for AXD301
-Voice Processing Subsystem for AXD301
-Bluetooth

Data Transmission

-Fiber Optic Transmission Technology
-Twisted Pair (Shielded-,Unshielded-, MLT-3)
-AMD TAXI Transmission Technology
-Cypress Hot Link Transmission Technology
-LVDS
-Backplane technologies

Communication Software

-X.25 Software including Network Management
-Ethernet Software including TCP/IP and Network Analyzer
-Token Ring Software
-FDDI Software including Station Management

Telecommunication Protocols

-X.25
-ISDN
-ATM
-TDM
-IP

Storage Technology

-SCSI: NCR53C720, ISP1000, LSI53C1000/53C1020 SCSI Coprocessors
-IDE/ATA
-SAS/SATA
-RAID Technologies

-SSD
CAD/CAE & Debug Tools
-ORCAD Schematic Entry
-PCAD Schematic Entry
-Cadence Schematic Entry
-PADS Layout Design System
-Cadence Layout Design System
-CUPL PLD Development System
-Lattice PDS for ispLSI devices
-Lattice ispExpert high level design system for ispLSI devices (Abel HDL based)
-64 Channel 100 MHz Logic Analyzer
-4 Channel 500 MHz Digital Oscilloscope
-BP 1128 PLD Programmer
-EPROM Programmer
Production Facilities (with hungarian partners)
-PCB manufacturing (up to 32 layers SMD)
-PCB (bare board) test
-PCB assembly
-Mechanical design
-Enclosure manufacturing
-Thermal design & cooling
-Equipment assembling
-Test adapter design
Software Know How
-Boot (Startup) codes (BIOS)
-Real time kernels (ECOS, VxWorks, OSE, etc.)
-Linux Kernels
-Debuggers
-Host drivers (Solaris, Windows NT, 95/98, 2000, MP, Linux)
-Applied Cryptography
-Application programs
-OSs (Windows, Linux)

Major Product Developments

-DNC/CNC Machine Tool Controller development (1971-73)
-GD'71 Vector Drawing Display development (as a minicomputer peripheral: 1973-75)
-Floating Point and Vector Processor for the Brown University Graphic System (1975-76)
-GD'80 Multiprocessing Graphic Display Family (1979-80)
-COBUS Coax Cable 1Mbps LAN (1979-80)
-Radar Signal Extractor based on GD'80 Architecture (1983)
-DARTS Radar Traing System for the Air Traffic Controllers at the Budapest Airport (based on GD'80 Gaphics, Processing,Concentrator Configurations and COBUS LAN 1982-85)
-TEKEMU Large Screen Monochrome Raster Display for Tektronix Storage Tube Dispaly Emulation (1983-84)
-TEXPRO (vertical) A4 Monochrome Raster Display for High Definition Text Processing Applications (1984-85)
-Intelligent Ethernet Controller for LAN Analyzer Applications (1986-87)
-PROM, EPROM & PLD Programmer Box (1988-89)
-GKS Color raster Display Terminal (with native – built in- GKS interpreter 1986)
-VMEBus Based Multiprocessing Platform for UNIX Server and High Performance Graphics Workstation Applications (1986-89)
-Kontron Graphics Workstation (Espirit EU Programme 1991-92)

-SUN Sbus based Single and Dual Port FDDI Controller Family (1992-95)
-ISABus based FDDI Controller (1995)
-SUN SBus based Storage Controller (SCSI 1991-92)
-Banknote Visual Inspection System based on dual TMS320C40 DSP (for Giesecke & Devrient 1993-04)
-PCIBus based 1Gbps Host Adapter (for Schneider & Koch 1998)
-PCIBus based Cryptomodule (x86 Pentium 1995)
-SUN Sbus based Cryptomodule (x86 Pentium 1995)
-PCIBus based Cryptomodule (ARM 2001)
-BKV Electronic Ticketing System Control Boxes (Gate Entry, Vehicle, Controller Manual Devices 2001-02)
-Time-domain reflectometer (TDR) for Fiber Optic Cable measurements (Control Board based on NEC 32 bit RISC Processor and VxWorks RTOS – for Kontron/Agilent 2000-01)
-CRYPTOBOX for govermment level secure encrypted communication (2003)
-Environment (Mechanical Vibration, Electric Noise, Temperature/Humidity) Test Equipment for Electron Microscope Installation Preparation (2001-02)
-Ericsson AXD Media Gateway CPU, IP processing and Voice @ Video Processing Modules (2005-08)
-Ericsson Mobile Media Gateway Voice @ Video Processing Modules (Motherboard & AMC DSP Daughterboards 2007-11)
-Ericsson Smart Service Router Backplane Switching Boards (2012-13)
-Ericsson Smart Service Router Server Board (using Quad Broadwell Intel Server CPUs 2014-16)
-Flextronics 1U and 2U Server Platforms (using on Dual Skylake/Icelake Intel Server CPUs 2016-18)