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Patents

Patents — U.S.

» 5,418,975, Wide instruction word architecture central processor, 5/23/1995 (with Vladimir J. Volkonsky, July K. Sakhin, Sergei V. Semenikhin, Valery Y. Gorshtein, Alexandr K. Kim, Leonid N. Nazarov).

» 6,243,822, Method and system for asynchronous array loading, 6/5/2001 (with Mikhail L. Chudakov, Oleg A. Konopleff, Yuli Kh. Sakhin, Andrey A. Vechtomov)

» 6,516,463, Method for removing dependent store-load pair from critical path, 2/4/2003 (with Sergey K.Okunev and Vladimir Y. Volkonsky)

» 6,526,573, Critical path optimization-optimizing branch operation insertion, 2/25/2003 (with Sergey K.Okunev and Vladimir Y. Volkonsky)

» 6,549,903, Integrity of tagged data, 4/15/2003 (with Feodor A. Gruzdov, Vladimir Y. Volkonsky, and Yuli Kh. Sakhin)

» 6,564,372, Critical path optimization-unzipping, 5/13/2003 (with Sergey K. Okunev and Vladimir Y. Volkonsky)

» 6,584,611, Critical path optimization - unload hard Extended Scalar Block, 6/24/2003 (with Sergey K.Okunev and Vladimir Y. Volkonsky).

» 6,560,775, Branch preparation, 5/6/2003 (with Feodor A. Gruzdov, Alexey P. Lizorkin, Yuli Kh. Sakhin, Evgeny Z. Stolyarsky, and Alexander M. Artymov).

» 5,794,029, Architectural support for execution control of prologue and epilogue periods of loops in a VLIW processor, 8/11/1998 (with Valeri G. Gorokhov, Feodor A. Gruzdov, Yuli Kh. Sakhin, and Vladimir Yu. Volkonski).

» 5,889,985, Array prefetch apparatus and method, 3/30/1999 (with Valeri G. Gorokhov, Feodor A. Grusdov, Yuli Kh. Sakhin, and Vladimir Y. Volkonski).

» 5,958,048, Architectural support for software pipelining of nested loop, 9/28/1999 (with Feodor A. Gruzdov, Yuli Kh. Sakhin, Vladimir S. Volin, and Vladimir Yu. Volkonski).

Patents — Russia

» Patent RF No. 1804645, Central processor, 1992 (with Y.K. Sakhin; V.Yu. Volkonskiy; V.Ya. Gorshtein; A.K.Kim; L.N. Nazarov; S.V. Semenikhin).

» Patent RF No. 1777148, Computer System, 1993 (with Y.K. Sakhin; V.Yu. Volkonskiy; V.Ya. Gorshtein; A.K. Kim; L.N. Nazarov; S.V. Semenikhin).

» Patent RF No. 2166791, Method and system for asynchronous array loading, 2000 (with A.K. Kim; M.L. Chudakov; Z.N. Zaitseva; V.K. Kabykin).

- » Patent RF 2184389, Method for pipelining of nested loop, 2002 (with V. Yu. Volkonskiy; V.G. Gorokhov; F.A. Gruzdov; A.K. Kim; A.Yu. Ostanevich).
- » Patent RF 2189630, Method and device for filtering interprocessor calls in multiprocessor computer systems, 2002 (with V.V. Tikhorskiy; A.K. Kim; M.L. Chudakov).

Publications/Speakerships

- » IFIP Congress'89, XI World Computer Congress, San Francisco, California, USA, 1989. Elbrus Software Methodology: Instrumentation - Experience.
- » International Conference on Parallel Computing Technologies, Novosibirsk, Russia, 1991. Methods of Parallel Information processing in Architecture of Soviet High-Performance Computers.
- » COMPCON 92 IEEE, San Francisco, California, USA, 1992. History of Soviet Computers.
- » COSMOS, Japan, 1994; New projects in Modern Architecture.
- » ACM 50th Anniversary celebration, USA, March1997; Member of the Honorary Committee ACM97.
- » Japan-Russia Advanced Science and Technology Exchange Promotion Forum. Tokyo, July 2000. E2K technology and Implementation.
- » HPC ASIA 2000. The Fourth International Conference/Exhibition on High-Performance Computing in Asia-Pacific Region, May 14-17, 2000, Beijing, China. Plenary speech: E2k Microprocessor Architecture Principles. Tutorial: Current status of High Performance Computing in Russia and E2k Microprocessor Basic Technologies: high speed, binary compatibility, secure computing.
- » 8th Annual Meeting of the American-Russian Chamber of Commerce, September 27, 2000, Denver, Colorado, USA. Cooperation between Elbrus team and American companies.
- » Business Computing: The Second 50 Years, 5-6 November, 2001, Guildhall, London, GB. 50 years of Business Computing. Panel discussion: Economic and social consequences and public policy.
- » Euro-Par 2000 Parallel Processing. 6th International Euro-Par Conference, Munich, Germany, August-September 2000; E2K technology and Implementation.
- » B. Babayan. "Elbrus architecture and software." Proceedings of the 4th All-Union Symposium on System and Theoretical Programming, Kishinev, Moldova USSR, May 31-June 2, 1983.
- » B. Babayan. "Basic principles for building CAD system." Dr.Sci. Dissertation, Institute of Precise Mechanics and Computer Equipment, Russian Academy of Science, 1972.
- » B. Babayan. "Methods of arithmetic operation execution for parallel computer." Transactions of the Moscow Institute of Physics and Technology, 1958.
- » Elbrus system. B. Babayan; Yu. Sakhin. Programming magazine, # 6, 1980.
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» B. Babayan, Yu. Sakhin. Elbrus system architecture and software. All Union conference High performance Computer Systems, 1981, Tbilisi, USSR.

» B. Babayan, Yu. Sakhin, V. Gorshtein, G. Kim, L. Nazarov. Specific features of Elbrus CPU architecture. Transactions of the Institute of Precise Mechanics and Computer Equipment, 1985, Moscow, USSR.

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» B. Babayan, Yu. Sakhin, V. Volkonskiy, V. Gorshtein, G. Kim, L. Nazarov. Specific features of Elbrus architecture and structure. First All Union conference "Supercomputers: development problems and use efficiency," 1987, Minsk, USSR

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» B. Babayan, G. Ryabov, G. Chinin. Elbrus software methodology: instrumentation - experience. Information Processing 89, G.X.Ritter, Elsevier Science Publishers B.V. (North-Holland), IFIP, 1989.

» Boris Babayan. Methods of parallel information processing in architecture of soviet high-performance computers. Information processing 91, 1991, World Scientific. Singapore-New Jersey-London-Hong Kong.

» B. Babayan. Main principles of E2K architecture. Free Software Magazine, vol. 1, No.2, February 2002.

» B. Babayan, Yu.Sakhin, A. Kim. "MCST-R" Family of Russian Universal Microprocessors." Electronics: Science, Technology, Business, No. 3, 2003.

Professional Affiliations

- » Acting Director, Institute of Microprocessor Computer Systems (IMCS)
- » Chairman at Elbrus International (1997 till present)
- » Chief Technological Officer at the Moscow Center for SPARC Technologies (MCST) (1992 till present).
- » Chairman of the Academic Council at the Institute of Microprocessor Computer Systems, RAS
- » Chairman of the Dissertation Council for awarding Ph.D. and Doctor of Science degrees IMCS RAS
- » Member of State Committee for State Prize Award of Russian Federation
- » Deputy Editor-in-Chief of "Information Technologies and Computer Systems" journal, Russian Academy of Science