Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry

2021, 10 (4): 559-568

(International Peer Reviewed Journal)

Knowledge Inn (in nature). 19

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Research Profile of John L. Hennessy

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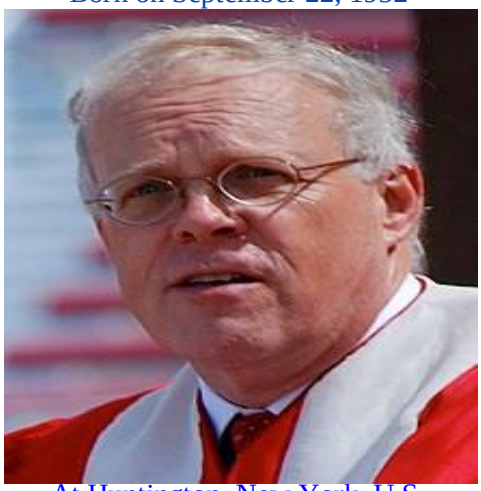
John L. Hennessy
Born on September 22, 1952



At Huntington, New York, U.S.

	All	Since2016
Citations	45,210	6049
h-index	69	22
# Papers	600+	

Biological Family of John L. Hennessy

Father	Aerospace engineer	
Mother	Teacher before raising her children	
Wife	Andrea Berti	Married in 1974

A.M. TURING AWARD

(deemed Nobel Prize for Computing)

Of year 2017 goes to

Two collaborators
John Hennessy (left), David Patterson (Right)

for their work pioneering an approach (RISC) to computer architecture and its impact on the microprocessor industry

Response of Hennessy on receing Turing award
! The Turing Award is truly a capstone to my career as a computer scientist
! I am honored to join many previous winners of the award and they happen to be my Stanford colleagues, namely Don Knuth, Ed Feigenbaum, John McCarthy, and Martin Hellman
! It feels good to be part of that groupof awardees of Turing prize ! "To be with august body, it's kind of a touch of immortality,"
! This award also celebrates (both informal and formal)collaborations between me and Dave Patterson (professor emeritus of computer science at the University of California, Berkeley) for about 30 years,
! "It's maybe a smaller version of winning the Nobel Prize,"

Open heart expression of Hennessy

! Prof. Hennessy acknowledges that there were gaps in his skill set when he addressed audience as president of Standford
- ➔ For instance "I had never given a speech that didn't include visual aids"

! Don't think you're the smartest person in the room.
📖 Don't think you have all the answersfor queries in the range boson to Universe

? This is humility

! I'm a computer scientist," he says, chuckling, "and the powers of two are very important, so the next one after 16 is 32."

✓ For us, "Turing award is s a capstone," Hennessy said
✓ Our careers are pretty much shaped at this point
✓ We aren't expecting any big career advancements

Hennessy- teaching

📖 I do teach. I'm teaching a freshman seminar "Great Discoveries and Inventions in Computing."
📖 It's sort of a survey of all the interesting things that have happened in the computing field over time, from hardware to software,
- ☞ I've got 16 bright-eyed, bushy-tailed students.

Appreciations for Hennessy's sparking intellect

Charles Prober[#], a friend, marvels at lock-trap memory of unnerving capacity of Hennessy'.
📖 Prober says" "Hennessy summons details from a book he read years earlier"

🕮 while “he himself sometimes forgets details from a book while still reading”
Marc Andreessen called him "the godfather of Silicon Valley” 102 check
senior associate dean for medical education at the School of Medicine

Academic profile of John Leroy Hennessy

Hennessy was a tinkerer in high school	Won a science fair prize for an automated tic-tac-toe machine

1973	Bachelor's degree	Electrical engineering	Villanova University
1975	M Sc	Computer science	Stony Brook University (then S.U.N.Y. Stonybrook)

Ph.D.	Computer science	Stony Brook University	1977

Ph.DThesis	A real-time language for small processors: design, definition and implementation
Doctoral advisor	Richard Kieburtz

Doctoral students	✓ Anant Agarwal ✓ Lawrence Paulson ✓ JosepTorrellas

Employment. John Leroy Hennessy			
1977-83	Assistant Professor	Electrical engineering	Stanford
1983-86	Associate Professor		Stanford
1984	Sabbatical year	Founded MIPS Computer Systems Inc	----
1986-present	Willard and Inez Kerr Bell Endowed Professor– inaugural holder	Electrical Engineering and Computer Science	Stanford
Academic administrative positions			
1989–93	Director	Stanford's Computer System Laboratory#	Stanford
1994–96	Chair	Department of Computer Science	Stanford
1996–99	Dean	School of Engineering	Stanford
#: research center run by Stanford's Electrical Engineering and Computer Science departments			

Administrative ladder in Academic institute		
1999-2000	🕮 Provost	o Stanford
2000-2016	🕮 President	o Stanford
2016-present	🕮 Director Knight-Hennessy Scholars Program[&]	o Stanford o
Board member	🕮 Google (later Alphabet Inc) -- chair of the board 🕮 CISCO Systems 🕮 Atheros Communications 🕮 Gordon and Betty Moore Foundation	

Knight-Hennessy Scholars Program[&]	✓ In 2016, Hennessy co-founded the Knight-Hennessy Scholars program ✓ Hennessywas its inauguralShriram Family Director ✓ The program has a $750 million endowment ✓ Thisprogramme fully funds graduate or professional degree students in any of Stanford's seven schools for up to three years ✓ The inaugural class of 51 scholars from 21 countries joined at Stanford in the fall of 2018	
	➔ Focus	🕮 Experience will be both in 🕮 Knowledge and 🕮 Leadership development
	➔ Goal	! Preparing a new generation of leaders o To enforce a positive impact on the world

RISC (Reduced Instruction Set Computer)		
1981	John Hennessy David Patterson	! Revolutionized computing + Increasing performance + Reducing costs
1984	Hennessy	✓ Cofounding MIPS Computer Systems ✓ Helped transfer this technology to industry ✓ Chief Scientist, (1984-1992)
1989	Initial public offering	
1992-1998	Hennessy	✓ Chief Architect, Silicon Graphics Computer Systems
1998	Hennessy	✓ Cofounded Atheros Communications + A pioneer in wifi technology ✓ Chair of the Board; 1998- 2010

Books of John Leroy Hennessy

Year	Title	Authors
	Computer Organization and Design Hardware/Software Interface	John Leroy Hennessy David A. Patterson
	Computer Architecture: A Quantitative Approach, fifth edition	

	A few Awards John Leroy Hennessy received
1983	o John J. Gallen Memorial award by Villanova
1984	o Presidential Young Investigator, National Science Foundation
1997	o Fellow, Association for Computing Machinery
2000	o John Von Neumann Medal (jointly with D. Patterson), IEEE
2012	o IEEE Medal of Honor
2017	o Fellow of the Royal Academy of Engineering, United Kingdom
2020	o BBVA Foundation Frontiers of Knowledge Award
2020	o Clark Kerr Award
	Honorary Doctorate Degrees 17
2010 Oct14	o 14th Dalai Lama presented a khata

	Judge for Awards
2013	➔ Member of panel of judges for the inaugural Queen Elizabeth Prize for Engineering
2015 to 2017	➔ Continued

Rearch papers of John Leroy Hennessy

TITLE	CITED BY	YEAR
Computer architecture: a quantitative approach JL Hennessy, DA Patterson Elsevier	18892	2011
Computer Organization and Design ARM Edition: The Hardware Software Interface DA Patterson, JL Hennessy Morgan kaufmann	5242	2016
Memory consistency and event ordering in scalable shared-memory	1726	1990

TITLE	CITED BY	YEAR
multiprocessors K Gharachorloo, D Lenoski, J Laudon, P Gibbons, A Gupta, J Hennessy ACM SIGARCH Computer Architecture News 18 (2SI), 15-26		
The stanford dash multiprocessor D Lenoski, J Laudon, K Gharachorloo, WD Weber, A Gupta, J Hennessy, ... Computer 25 (3), 63-79	1430	1992
The stanford flash multiprocessor J Kuskin, D Ofelt, M Heinrich, J Heinlein, R Simoni, K Gharachorloo, ... Proceedings of 21 International Symposium on Computer Architecture, 302-313	1046	1994
The directory-based cache coherence protocol for the DASH multiprocessor D Lenoski, J Laudon, K Gharachorloo, A Gupta, J Hennessy ACM SIGARCH Computer Architecture News 18 (2SI), 148-159	969	1990
An evaluation of directory schemes for cache coherence A Agarwal, R Simoni, J Hennessy, M Horowitz ACM SIGARCH Computer Architecture News 16 (2), 280-298	817	1988
SUIF: An infrastructure for research on parallelizing and optimizing compilers RP Wilson, RS French, CS Wilson, SP Amarasinghe, JM Anderson, ... ACM Sigplan Notices 29 (12), 31-37	752	1994
The priority-based coloring approach to register allocation FC Chow, JL Hennessy ACM Transactions on Programming Languages and Systems (TOPLAS) 12 (4), 501-536	499	1990
An analytical cache model A Agarwal, J Hennessy, M Horowitz ACM Transactions on Computer Systems (TOCS) 7 (2), 184-215	442	1989
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Load balancing and data locality in adaptive hierarchical N-body methods: Barnes-Hut, fast multipole, and radiosity JP Singh, C Holt, T Totsuka, A Gupta, J Hennessy	329	1995

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Postpass code optimization of pipeline constraints JL Hennessy, T Gross ACM Transactions on Programming Languages and Systems (TOPLAS) 5 (3), 422-448	328	1983
Two techniques to enhance the performance of memory consistency models K Gharachorloo, A Gupta, JL Hennessy Computer Systems Laboratory, Stanford University	326	1991
Efficient and exact data dependence analysis DE Maydan, JL Hennessy, MS Lam Proceedings of the ACM SIGPLAN 1991 conference on Programming language …	315	1991
False sharing and spatial locality in multiprocessor caches J Torrellas, HS Lam, JL Hennessy IEEE Transactions on Computers 43 (6), 651-663	310	1994
VLSI processor architecture JL Hennessy IEEE Computer Architecture Letters 33 (12), 1221-1246	305	1984
Comparative evaluation of latency reducing and tolerating techniques A Gupta, J Hennessy, K Gharachorloo, T Mowry, WD Weber Proceedings of the 18th Annual International Symposium on Computer …	288	1991
The DASH prototype: Implementation and performance D Lenoski, J Laudon, T Joe, D Nakahira, L Stevens, A Gupta, J Hennessy ACM SIGARCH Computer Architecture News 20 (2), 92-103	273	1992
Multiprocessor simulation and tracing using Tango H Davis, SR Goldschmidt, J Hennessy Proceedings of the 1991 International Conference on Parallel Processing 2 …	269	1991
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J Hennessy ACM Transactions on Programming Languages and Systems (TOPLAS) 4 (3), 323-344		
Computer technology and architecture: An evolving interaction JL Hennessy, NP Jouppi Computer 24 (9), 18-29	203	1991
A new golden age for computer architecture JL Hennessy, DA Patterson Communications of the ACM 62 (2), 48-60	197	2019
The future of systems research J Hennessy Computer 32 (8), 27-33	195	1999
Scaling parallel programs for multiprocessors: Methodology and examples JP Singh, JL Hennessy, A Gupta Computer 26 (7), 42-50	190	1993
The performance impact of flexibility in the Stanford FLASH multiprocessor M Heinrich, J Kuskin, D Ofelt, J Heinlein, J Baxter, JP Singh, R Simoni, ... Proceedings of the sixth international conference on Architectural support …	183	1994
Organização e Projeto de Computadores: a interface hardware/software JL Hennessy, DA Patterson Elsevier Brasil	169*	2014
WSCLOCK—a simple and effective algorithm for virtual memory management RW Carr, JL Hennessy Proceedings of the eighth ACM symposium on Operating systems principles, 87-95	168	1981
Analysis of cache performance for operating systems and multiprogramming A Agarwal, JL Hennessy Kluwer Academic Publishers	166	1989
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