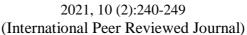
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Journal of Applicable Chemistry





Knowledge Inn (in nature). 16

- Research Profile of David Rumelhart
- Artificial Intelligence (1956 to 2020)

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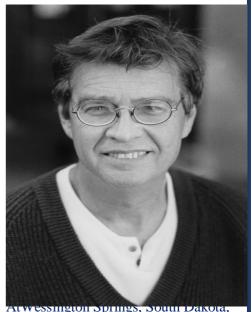
Research Profile of <mark>David Rumelhart</mark>

Academic profile of David Rumelhart		
University of South Dakota	Degree [psychology; math]	1963
Stanford	Ph.D	1967

Employment. David Rumel	hart
Faculty of University of California, San Diego	1967-1987
StanfordUniversity	1987 to 1998 (*)
(*) when the symptoms of Pick's disease# became disabling, Rumelhartmoved to Ann Arbor, Michiganto	

live with his brother Donald (#)neurodegenerative condition robbed him of his formidable intellectual powers

Born on 12 June 1942



Atwessington Springs, South Dakota, United States

Awards to David Rumelhart

- MacArthur fellowship
- American Psychological
 Association's
 Distinguished Scientific Contribution
 Award

AwardNamed after David Rumelhart

- \$100,000 award given annually by the Glushko-Samuelson Foundation
 - ! To any individual or team making a contribution to "theoretical foundations of human cognition"

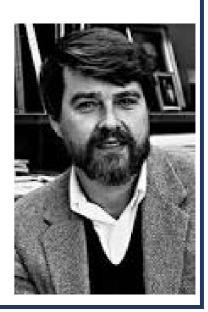
Biological Family of David Everett Rumelhart		
Relation	Name	Profession
Father	Everett	Printer
Mother	Thelma	Librarian
Brothers:	Donald; Roger;	
Wife	Marilyn Austin	Ended in divorce
Children	Karl, Peter	
Grandsons	Four	

Died: on 13 March 2011

at Chelsea, Michigan, United States

Books of David Rumelhart

- Parallel distributed processing, Exploration in the microstructure of cognition Vol.1: Foundations, David E. Rumelhart, James L McClelland, 1987
- Explorations in Parallel Distributed Processing: A Handbook of Models, Programs, and Exercises / J.L. McClelland, D.E. Rumelhart, 1988



Select high impact publications of David E Rumelhart

Research contribution	#citations	Year of pub
Parallel distributed processing: Explorations in the microstructure of cognition DE Rumelhart, JL McClelland, PDPR Group MIT press	28690*	1986
An interactive activation model of context effects in letter perception: I. An account of basic findings. JL McClelland, DE Rumelhart Psychological review 88 (5), 375	6362	1981
On learning the past tenses of English verbs DE Rumelhart, JL McClelland	2843	1986
Parallel Distributed Processing: Explorations in the Microstructure of		
On learning the past tenses of English verbs DE Rumelhart, JL McClelland	2843	1986
Parallel Distributed Processing: Explorations in the Microstructure of		
Explorations in parallel distributed processing: A handbook of models, programs, and exercises JL McClelland, DE Rumelhart	1965	1989
MIT press		
Explorations in parallel distributed processing: A handbook of models, programs, and exercises JL McClelland, DE Rumelhart MIT press	1965	1989
m. press		
An interactive activation model of context effects in letter perception: II. The contextual enhancement effect and some tests and extensions of the model. DE Rumelhart, JL McClelland Psychological review 89 (1), 60	1519	1982
Distributed memory and the representation of general and specific information. JL McClelland, DE Rumelhart Journal of Experimental Psychology: General 114 (2), 159	1447	1985
Schemata and Sequential thought processes in PDP models DE Rumelhart, P Smolensky, JL McClelland, G Hinton	1379	1986

Research contribution	#citations	Year of pub
Parallel distributed processing: explorations in the microstructures of		
A general framework for parallel distributed processing DE Rumelhart, GE Hinton, JL McClelland Parallel distributed processing: Explorations in the microstructure of	1293	1986

Year	Research contribution
2013	McClelland JL, Rumelhart DE . An Interactive Activation Model of Context Effects in Letter Perception: Part I. An Account of Basic Findings Readings in Cognitive Science: a Perspective From Psychology and Artificial Intelligence. 580-596. DOI: 10.1016/B978-1-4832-1446-7.50048-0
2013	Rumelhart DE , Hinton GE, Williams RJ. Learning Internal Representations by Error Propagation <i>Readings in Cognitive Science: a Perspective From Psychology and Artificial Intelligence</i> . 399-421. DOI: 10.1016/B978-1-4832-1446-7.50035-2
2013	Rumelhart DE, Smolensky P, McClelland JL, Hinton GE. Schemata and Sequential Thought Processes in PDP Models Readings in Cognitive Science: a Perspective From Psychology and Artificial Intelligence. 224-249. DOI: 10.1016/B978-1-4832-1446-7.50020-0
2013	McClelland JL, Rumelhart DE , Hinton GE. The Appeal of Parallel Distributed Processing Readings in Cognitive Science: a Perspective From Psychology and Artificial Intelligence. 52-72. DOI: 10.1016/B978-1-4832-1446-7.50010-8
1998	Servos P, Zacks J, Rumelhart DE , Glover GH. Somatotopy of the human arm using fMRI. <i>Neuroreport</i> . 9: 605-9. PMID 9559924 DOI: 10.1097/00001756-199803090-00008
1994	Engel SA, Rumelhart DE , Wandell BA, Lee AT, Glover GH, Chichilnisky EJ, Shadlen MN. fMRI of human visual cortex. Nature. 369: 525. PMID 8031403 DOI: 10.1038/369525a0
1994	Widrow B, Rumelhart DE , Lehr MA. Neural networks: applications in industry, business and science <i>Communications of the Acm.</i> 37: 93-105. DOI: 10.1145/175247.175257

Year	Research contribution
1994	Rumelhart DE, Widrow B, Lehr MA. Basic ideas in neural networks <i>Communications of the Acm.</i> 37: 87-92. DOI: 10.1145/175247.175256
1994	Franco H, Cohen M, Morgan N, Rumelhart D , Abrash V. Context-dependent connectionist probability estimation in a hybrid hidden Markov modelneural net speech recognition system Computer Speech and Language. 8: 211-222. DOI: 10.1006/csla.1994.1010
1993	Golden RM, Rumelhart DE . A Parallel Distributed Processing Model of Story Comprehension and Recall <i>Discourse Processes</i> . 16: 203-237. DOI: 10.1080/01638539309544839
1992	Jordan MI, Rumelhart DE . Forward models: Supervised learning with a distal teacher <i>Cognitive Science</i> . 16: 307-354. DOI: 10.1016/0364-0213(92)90036-T
1991	Weigend AS, Rumelhart DE . The effective dimension of the space of hidden units . Proc . IEEE Int . Joint Conf . on Neural Networks , 1991 , vol . 3 , pp . 2069-2074
1991	Weigend AS, Rumelhart DE , Huberman BA. Generalization by weight-elimination applied to currency exchange rate prediction Proceedings. Ijcnn-91-Seattle: International Joint Conference On Neural Networks. 837-841.
1990	Curry B, Rumelhart DE . MSnet: A Neural Network which Classifies Mass Spectra <i>Tetrahedron Computer Methodology</i> . 3: 213-237. DOI: 10.1016/0898-5529(90)90053-B
1988	McClelland JL, Rumelhart DE . A simulation-based tutorial system for exploring parallel distributed processing <i>Behavior Research Methods</i> , <i>Instruments</i> , & <i>Computers</i> . 20: 263-275. DOI: 10.3758/BF03203842
1986	Rumelhart DE, Hinton GE, Williams RJ. Learning representations by back-propagating errors <i>Nature</i> . 323: 533-536. DOI: 10.1038/323533a0
1985	McClelland JL, Rumelhart DE . Distributed memory and the representation of general and specific information. <i>Journal of Experimental Psychology. General</i> . 114: 159-97. PMID 3159828 DOI: 10.1037/0096-3445.114.2.159
1985	Geben BF, Null CH, Furnas G, Hagen M, Rumelhart D . Advanced computing in psychology Behavior Research Methods, Instruments, & Computers. 17: 331-338.

Year	Research contribution
	DOI: 10.3758/BF03214405
1985	Rumelhart DE, McClelland JL. Levels Indeed! A Response to Broadbent Journal of Experimental Psychology: General. 114: 193-197. DOI: 10.1037/0096-3445.114.2.193
1985	Rumelhart DE, Zipser D. Feature discovery by competitive learning <i>Cognitive Science</i> . 9: 75-112. DOI: 10.1016/S0364-0213(85)80010-0
1982	Rumelhart DE, McClelland JL. An interactive activation model of context effects in letter perception: Part 2. The contextual enhancement effect and some tests and extensions of the model. Psychological Review. 89: 60-94. PMID 7058229 DOI: 10.1037/0033-295X.89.1.60
1982	Rumelhart DE, Norman DA. Simulating a skilled typist: a study of skilled cognitive-motor performance Cognitive Science. 6: 1-36. DOI: 10.1016/S0364-0213(82)80004-9
1981	Norman DA, Rumelhart DE . The LNR approach to human information processing. Cognition. 10: 235-40. PMID 7198542 DOI: 10.1016/0010-0277(81)90051-2
1981	McClelland JL, Rumelhart DE . An interactive activation model of context effects in letter perception: I. An account of basic findings *Psychological Review. 88: 375-407. DOI: 10.1037/0033-295X.88.5.375
1977	Stevens AL, Levin JA, Olds RR, Rumelhart DE . A computer system for automatically constructing stimulus material <i>Behavior Research Methods & Instrumentation</i> . 9: 269-273. DOI: 10.3758/BF03202232
1974	Rumelhart DE, Siple P. Process of recognizing tachistoscopically presented words. Psychological Review. 81: 99-118. PMID 4817613 DOI: 10.1037/h0036117
1973	Rumelhart DE, Abrahamson AA. A model for analogical reasoning Cognitive Psychology. 5: 1-28. DOI: 10.1016/0010-0285(73)90023-6
1970	Rumelhart DE. A multicomponent theory of the perception of briefly exposed visual

Year	Research contribution
	displays Journal of Mathematical Psychology. 7: 191-218. DOI: 10.1016/0022-2496(70)90044-1

Expertise.Michael Irwin Jordan

- Mathematical psychology
- Symbolic artificial intelligence
- Parallel distributed processing

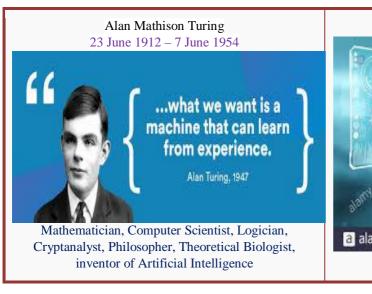


Context sensitivity of human intelligence

Recognition

A Review of General Psychology surveypublished in 2002, ranked

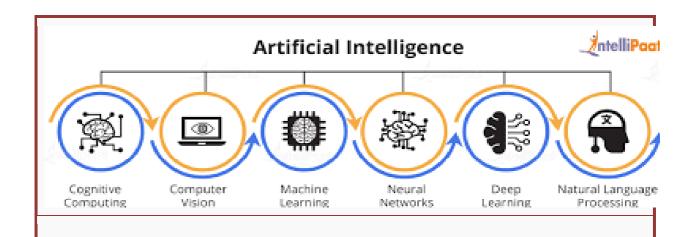
! Rumelhart as the 88th most cited psychologist of the 20th century, tied with John Garcia, James J. Gibson, Louis Leon Thurstone, Margaret Floy Washburn, and Robert S. Woodworth.





Artificial Intelligence (1956 to 2020)

Birth - Growth - Dead Blow - Dark Period - Revitalization - Winter - Boom - Hype - Now - Expectations -- Realizations -- New AI -- Future



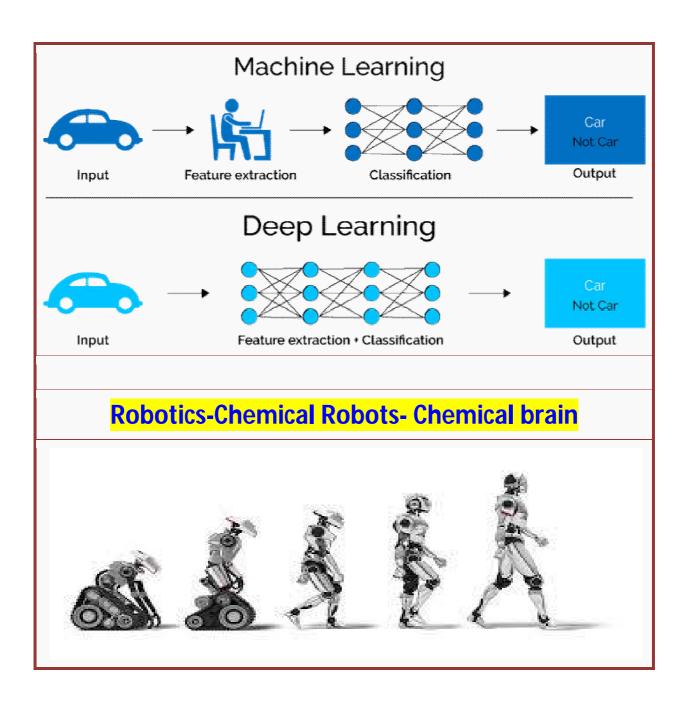








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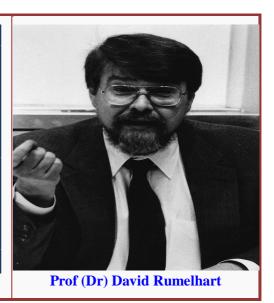




Sophia a social humanoid robot by Hanson Robotics company (mid-March 2016)

Human beings

- Sense organs are not tape or video recorders
- **Memory** is not a passive store of sounds and static or dynamic 3D-images
- **Brain** is complex organ processing and reprocessing information. It generates structured knowledge
- Some knowledge is related to specific events of experience
- Another set of knowledge is in the form of general abstractions—not tied with specifics of time, place, or source
- ? representation of knowledge with structure



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