



Journal of Applicable Chemistry

2019, 8 (2): 914-917
(International Peer Reviewed Journal)



Knowledge Inn (in nature)

 *Research Profile of* **Christof Koch**

 *Knowledge Discovery Algorithms*

KLab

rsr.chem1979

**Brain
Scientist**

Christof Koch

USA

Research Profile of **Christof Koch**

Christof Koch

Chief Scientific Officer and
President of
Allen Institute for Brain Science, Seattle,
USA

email:

	All	Since 2014
Citations	1,16,384	43,710
h-index	143	84
# Publications	821	
Accessed on 19-02-2019; 5-3-19		



Born on November 13, 1956
[Kansas City, Missouri](#)

Skills and Expertise

- | | |
|---|----------------------------|
| Neural Networks and Artificial Intelligence | Neural Signal Processing |
| Cognitive Neuroscience | Artificial Consciousness |
| Computational Intelligence | Cognitive Modeling |
| Neurophysiology | Neural Coding |
| Electrophysiology | Neural Engineering |
| Cognitive Science and Artificial Thinking | Neuroengineering |
| Computational Neuroscience | Theoretical Neuroscience |
| Brain Dynamics | Neuroinformatics |
| Computational Modeling | LFP |
| Neural Modeling | Spiking Neural Networks |
| Oscillation | Systems Neuroscience |
| Brain Modeling | Mathematical Neurosciences |

Academic profile of Christof Koch

Graduation

Lycée Descartes with a French Baccaaurèat (Section C)	1974	
---	------	--

Master degree		
Physics (Master Thesis under Prof. Mario Del Cin)		1980
1980 Doctoral research		
Max Planck Institute in Tübingen, Germany Thesis: Nonlinear information processing in dendritic trees of arbitrary geometry Doctor-Fathers (thesis advisors) :Valentin Braitenberg ; Tomaso Poggio	1982	
Post-Doctoral research		
Brain and Cognitive Sciences and Artificial Intelligence Laboratory at MIT	1982-1986	

Employment		
Asst. professor	California Institute of Technology (Caltech) (to understand information processing and coding in the rodent neocortex)	1986-2013
Chief Scientific Officer	Allen Institute	2011
President		2015

Year	Inventions
Continuous flash suppression	Efficient psychophysical marking technique for rendering images invisible for many seconds.

Collaborations	
Francis Crick (1962 Nobel Laureate)	Neural Correlates of Consciousness (1990-2004)
Molecular biologist turned into neuroscientist	
Giulio Tononi. (Integrated Information Theory (IIT) of consciousness)	Psychiatrist and neuroscientist

Typical Publications	# Citations	Year of pub
A model of saliency-based visual attention for rapid scene analysis L Itti, C Koch, E Niebur IEEE Transactions on pattern analysis and machine intelligence 20 (11), 1254	10150	1998
The conscious mind: In search of a fundamental theory DJ Chalmers Oxford university press	9089	1996
Computational modelling of visual attention L Itti, C Koch Nature reviews neuroscience 2 (3), 194	4366	2001

Shifts in selective visual attention: towards the underlying neural circuitry C Koch, S Ullman Matters of intelligence, 115-141	4150	1987
Graph-based visual saliency J Harel, C Koch, P Perona Advances in neural information processing systems, 545-552	3149	2007
A saliency-based search mechanism for overt and covert shifts of visual attention L Itti, C Koch Vision research 40 (10-12), 1489-1506	3079	2000
Biophysics of computation: information processing in single neurons C Koch Oxford university press	2911	2004

Knowledge Discovery Algorithms

Information Source (is) ACS.org ;

Ti: Perspectives on Knowledge Discovery Algorithms Recently Introduced in Chemoinformatics: Rough Set, Theory, Association Rule Mining, Emerging Patterns, and Formal Concept Analysis

Au: Eleanor J. Gardiner and Valerie J. Gillet

JO: J. Chem. Inf. Model., 2015, 55 (9), pp 1781–1803; **DOI :** DOI: 10.1021/acs.jcim.5b00198

Methods

- ✓ Rough Set Theory
- ✓ Association Rule Mining
- ✓ Emerging Patterns
- ✓ Formal Concept Analysis
- ✓ RST
- ✓ ARM
- ✓ EP
- ✓ FCA

Applications

- ✓ chemogenomics
- ✓ proteochemometrics
- ✓ Rules.(Struct.Prop. Relat)
- +Clear physical meaning

Knowledge

- 📖 CHEMical Process
- 📖 MATHEmatical method
- 📖 ALGorithm Software-machine

Knowledge

- ▶ Extraction
 - Process/simulation/information
- ▶ discovery
 - databases

**R. Sambasiva Rao, School of Chemistry
Andhra University, Visakhapatnam
rsr.chem@gmail.com**