

SciRide Finder : a citation-based paradigm in biomedical literature search

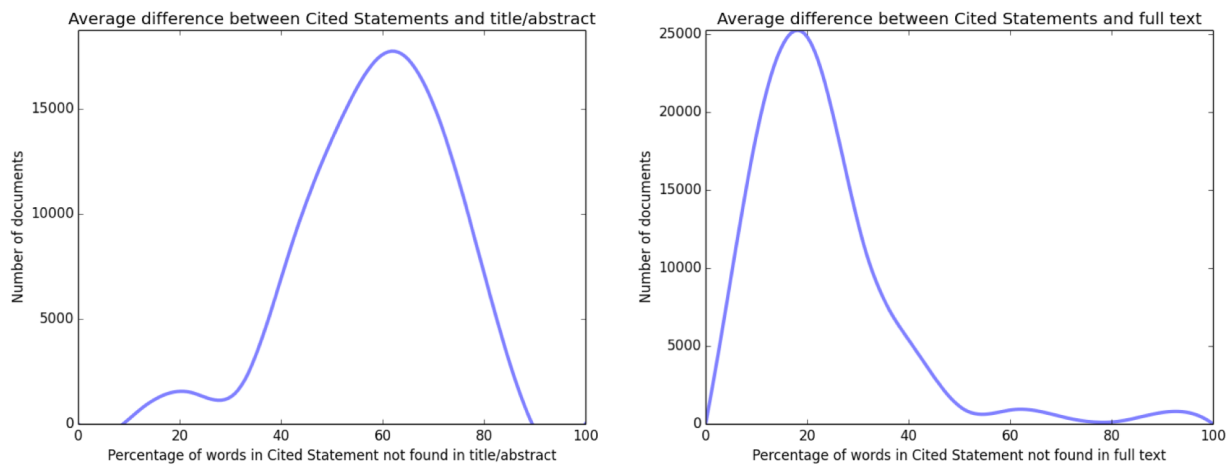
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¹ SciRide.org

* Corresponding Author

1. Cited Statements are on average different from text content of documents they cite.

We have also measured the corresponding average difference between titles/abstracts, full text of documents and Cited Statements referring to them. For each of the 691,354 documents we have measured the average difference between Cited Statements referring to it and its title/abstract and full text (Supplementary Figure 1). For 73% of all documents, the average difference between document's Cited Statements and title/abstract is greater than 50%. For 61% of all documents, the average difference between document's Cited Statements and full text is at greater than 25%.



Supplementary Figure 1. Average difference between Cited Statements and text of documents they refer to. For each of 691,354 documents, we calculate the average difference between Cited Statements and title/abstract (left) and full text (right) of documents they refer to. This demonstrates that on average, Cited Statements contain significant portions of text different from the title/abstract and full text of the document they refer to.

SciRide

SciRide Finder

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Hela Pol Chip-seq

Search About/Help

Our stats:
39,608,400 Cited Statements
covering 31% of Pubmed articles.

A → *Source Paper: Nature, R-loops induce repressive chromatin marks over mammalian gene terminators*
"The following publicly available human datasets were used: G9a ChIP-chip (GSE24480), Pol II ChIP-seq: ENCODE defined enriched regions (narrow peak) for HeLa-S3 using the phospho2 Pol II antibody ab5095 (GSE31477), HPI1y ChIP-seq (GSE28115) as well as R-loop locations delineated by DRIP-seq (SRAD48940.1)."

B → "Specifically, our analysis included Pol II and III ChIP-seq performed with IMR-90 fibroblasts, K562 chronic myelogenous leukemia (CML) cells, HeLa adenocarcinoma cells and GM12878 lymphoblastoid cells, as well as additional RNA Pol II-only ChIP-seq data for HUVEC (human umbilical vein) endothelial cells and peripheral blood-derived erythroblast cells (PBDE) purified from human blood samples (Additional file : 1)-1."

C → *Papers cited by the source:*
PMID: 20411673
PMID: 20199302
PMID: 20418882

Source Paper: Nature Communications, SINE transcription by RNA polymerase III is suppressed by histone methylation but not by DNA methylation
"For pol III ChIP-BS-Seq, one library was prepared with eluate from 10 technical replicate RPC155 ChIP assays carried out as previously (~10ng; all replicates were from the same batch of cross-linked HeLa cells, grown to 75% confluence), following the illumina ChIP-Seq library protocol with bisulfite conversion as for the first input library."

Source Paper: Genome Biology, Sequence specificity incompletely defines the genome-wide occupancy of Myc
"Using the UCSC Genome Browser and ChIP-Seq datasets generated from HeLa cells with antibodies stringently validated by the ENCODE project, occupancies of Myc and Max visually correlate with Pol II better than with the E-box element CACGTG."

Supplementary Figure 2. Example of CS search for the identification of datasets. A search for HeLa (cell type) Pol (protein) ChIP-Seq (Method), identifies publications that have used already published datasets and provides links to the original publications where these datasets were first used. **A.** Title of the publication where the CS appears. **B.** Context where the CS appears **C.** references for the CS.

The image shows the SciRide Finder web application interface. On the left, the search bar contains the text "mRNA export transcription". Below the search bar are buttons for "Search" and "About/Help". The main content area on the right displays a list of search results, each with a source paper title, a highlighted statement, and a list of PMIDs.

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mRNA export transcription

Search About/Help

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Source Paper: *Genes, Regulation of mRNA Trafficking by Nuclear Pore Complexes*
"In addition, the conserved TREX2 (transcription and export) complex couples transcription with mRNA export at NPCs ."

Papers cited by the source:
PMID: 12411522
PMID: 19328966
PMID: 22307388
PMID: 25591820

Source Paper: *BMC Evolutionary Biology, Comparative genomics of proteins involved in RNA nucleocytoplasmic export*
"The dimeric export receptor operates in association with TREX (Transcription/Export), a multiprotein complex that connects transcription with mRNA export ."

Papers cited by the source:
PMID: 11960033
PMID: 11979277

Source Paper: *Molecular Biology of the Cell, Nup50 is required for cell differentiation and exhibits transcription-dependent dynamics*
"Further, NPCs appear to coordinate transcription with mRNA export by interacting both with the RNA processing and mRNA export machineries ."

Papers cited by the source:
PMID: 18957205

Source Paper: *PLoS ONE, Nuclear Export of Human Hepatitis B Virus Core Protein and Pre-genomic RNA Depends on the Cellular NXF1-p15 Machinery*
"In the NXF1-p15 pathway, TREX (transcription/export) complex was proposed to couple nuclear pre-mRNA processing with mRNA export ."

Papers cited by the source:
PMID: 15901495

Source Paper: *PLoS Pathogens, A Novel Mechanism Inducing Genome Instability in Kaposi's Sarcoma-Associated Herpesvirus Infected Cells*
"The Transcription and Export complex (TREX) has multiple roles throughout mRNA processing including recruitment of the nuclear export receptor, TAP, to initiate

Supplementary Figure 3. Example of CS search for the appearance of two scientific terms. A search for mRNA export and transcription, returns papers identifying the overlap and coupling of the two terms as well as the original sources where these connections are based.

2. SciRide Finder as an orthogonal search engine Examples.

SciRide Finder presents results as Cited Statements – short statements from the literature supported by evidence rather than titles, abstracts or excerpts of full text. As such it differs from the established search engines in terms of retrieval strategy as well as presentation of results. Because of its nature however, it is designed to help in a set of specific scenarios which are given in comparative examples below:

The image displays two screenshots of the SciRide Finder search interface. The left screenshot shows the search results page for 'causes dna damage', displaying a list of articles with their titles and authors. The right screenshot shows the search results page for 'causes dna damage' on PubMed, displaying a list of articles with their titles, authors, and abstracts.

Left Screenshot (SciRide Finder):

- Search term: causes dna damage
- Articles listed:
 - "Mitomycin C crosslinks to DNA and causes DNA damage."**
Source Paper: *Mol Pathogen, Genetic diversity as Consequence of a Mitomycin and Neomycin C*
PMID: 1953170
 - "Peroxyinitrite causes DNA damage via oxidative reactions."**
Source Paper: *Medical Gas Research, 83000 in medical area: emphasis on neuroprotection in hypoxia and anoxia*
PMID: 1925298
 - "The oxidative DNA damage causes mispairings during DNA replication."**
Source Paper: *Journal of Theoretical Research, Molecular effects of gamma and carbon ion beams on Arabidopsis seedlings*
PMID: 16000334
- Additional content: Molecular mechanisms of mammalian DNA repair and the DNA damage checkpoints, The DNA damage response: ten years after, Gene regulation and DNA damage in the ageing human brain.

Right Screenshot (PubMed):

- Search term: causes dna damage
- Articles listed:
 - Peroxyinitrite causes DNA damage and oxidation of thiol in rat thymocytes [corrected]**
MG Sato, E Bernauer, GL Squatrito, ... of Biochemistry and ... 1995 - europepmc.org
 - 8-Hydroxyguanine, an abundant form of oxidative DNA damage, causes G→T and A→C substitutions.**
SJC Cheng, SS Chang, H Kawai, S Nishimura, ... Journal of Biological ... 1992 - ASBMB
 - Defective S phase chromatin assembly causes DNA damage, activation of the S phase checkpoints, and S phase arrest.**
X Yu, AA Franco, H Santos, DM Nellig, CD Kaulfuss, ... Molecular cell, 2003 - Elsevier
- Additional content: Excess of cigarette smoke causes DNA damage in oropharyngeal tissue in dogs, DNA Damage and Repair in Vascular Disease, DNA damage in peripheral blood lymphocytes from patients with OSAS.

Example 1. Search scenario: DNA damage is a widely studied subject in molecular biology. Molecules/processes causing DNA damage are being commented on in the literature and can be sought after using search phrase 'causes DNA damage'. SciRide Finder immediately shows such comments giving the user an idea what publication it is worth reading and what molecules are currently known to cause DNA damage. Other search engines however either show reviews, tasking the researcher in reading through large volumes of information, or even confuse the use of the word 'cause' in this case.

The image shows a search results page for the query "first therapeutic antibody". The results are displayed across four different search engines: SciRide Finder, Google Scholar, Semantic Scholar, and PubMed.

SciRide Finder Results:

- Source Paper: Molecular and Clinical Oncology. Muromonab treatment of refractory peripheral T-cell lymphoma following intrathecal intrathecal and intravenous. A case report**
- "Muromonab is the first approved glycol-engineered therapeutic antibody and first approved monoclonal antibody to target CD4 (-)"**
- Source Paper: Science@Signals. Long-lasting neutralization of CS by SKY16, a novel recycling antibody, is a potential therapy for multiple sclerosis**
- "The first therapeutic recycling antibody was created by engineering tocilizumab (Actemra), an antibody against the interleukin-6 receptor (IL-6R)." -**
- Source Paper: PLoS ONE. High Affinity Humanized Antibodies without Making Lightchains: Immunologic Paradox with Membrane Cell Display and in Vivo Selection Hypermutation**
- "Immunization of wild-type animals was used to produce the first therapeutic antibody, the anti-CD3 monoclonal antibody (mAb) muromonab."**

PubMed Results:

Search results for "first therapeutic antibody" (33925 items). The top results include:

- FC-Receptor Interactions Regulate Both Cytotoxic and Immunomodulatory Therapeutic Antibody Effector Functions.** Dillio DJ, Ravetch JV. *Cancer Immunol Res.* 2015 Jul;3(7):704-13. doi: 10.1158/2328-6066.CCR-15-0120. Review. PMID: 26138698 Free Article [Similar articles](#)
- The emergence of antibody therapies for Ebola.** Hatt A, Pauly M, Whaley K, Qiu X, Kobinger G, Zellin L. *Hum Antibodies.* 2015 Dec 23;2(3-4):49-56. doi: 10.3233/HAB-150284. Review. PMID: 27472862 [Similar articles](#)
- The development of potential antibody-based therapies for myeloma.** Sherbenou DW, Behrens CR, Su Y, Wolf JL, Martin TG 3rd, Liu B. *Blood Rev.* 2015 Mar;29(2):81-91. doi: 10.1016/j.blre.2014.09.011. Epub 2014 Sep 28. Review. PMID: 25294123 Free PMC Article [Similar articles](#)

Example 2. Search scenario: find out which was the first therapeutic antibody. Results for the search phrase 'first therapeutic antibody' are shown for SciRide Finder, Google Scholar, Semantic Scholar and PubMed. Only SciRide Finder and Semantic Scholar correctly identify Muromab which indeed was the first therapeutic antibody.

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Efficient Biomedical Literature Search.

Search: Illumina error rate

Results:

- Source Paper: Diagnostic and therapeutic next-generation sequencing: advances and applications in cancer diagnosis**
"The error rate estimated for Illumina technology is ~0.4%."
Papers cited by the source: PMID: 23762172 Cited by 18 PubMed Documents, 501 times
- Source Paper: Next-Gen, There Are Not the Errors You Are Looking For: Efficient Online Error Counting Using a Probabilistic Data Structure**
"The high error rate (eg Illumina has a 0.1-1% per-base error rate) generates many unique k-mers."
Papers cited by the source: PMID: 19937659

Development of a dual-index sequencing strategy and curation pipeline for analyzing amplicon sequence data on the MiSeq Illumina sequencing platform.

James J. Koopchik, Sarah L. Westcott, Neilson T. Baxter, Sarah K. Highlander, Patrick D. Schloss - Applied and environmental microbiology • 2013

Rapid advances in sequencing technology have changed the experimental landscape of microbial ecology. In the last 10 years, the field has moved from sequencing hundreds of 16S rRNA gene fragments per study using clone libraries to the sequencing of millions of fragments per study using next-generation sequencing technologies from 454 and Illumina. As these... (More)

79 View PDF Similar Papers More...

Improved base calling for the Illumina Genome Analyzer using machine learning strategies

Martin Richter, Udo Stenzel, Janet Salas - Genome Biology • 2009

The Illumina Genome Analyzer generates millions of short sequencing reads. We present Ibis (Improved base identification system), an accurate, fast and easy-to-use base caller that significantly reduces the error rate and increases the output of usable reads. Ibis is faster and more robust with respect to chemistry and technology than other publicly... (More)

12 View on Springer Similar Papers More...

Sequence-specific error profile of Illumina sequencers

Remuela-Bautista, Tala-Cabrera - 10 bioRxiv: 016663/2016 - Nucleic acids research • 2011

We identified the sequence-specific starting positions of consecutive miscalls in the mapping of reads obtained from the Illumina Genome Analyzer (GA). Detailed analysis of the miscall pattern indicated that the underlying mechanism involves sequence-specific interference of the base elongation process during sequencing. The two major sequence patterns that... (More)

illumina error rate

About 78,500 results (0.07 sec)

Articles

- Trimomatic: a flexible trimmer for Illumina sequence data**
PMID: 24161408
This fits well with typical Illumina data, which generally have poorer quality toward the 3' end... The final filter models the error rate and uses the error probabilities from the read quality scores to determine the accumulated likelihood of errors over the read...
Cited by 4628 Related articles All 19 versions Web of Science: 2861
- Optimized filtering reduces the error rate in detecting genomic variants by short-read sequencing**
J. Roovers, F. De Sili, H. Zhao, A. Liekens - Nature • 2012 - nature.com
error rates and thereby facilitate variant detection in data from two short-read sequencing technologies, Complete Genomics and Illumina... Cumulative application of all effective filters reduced the error rate by 290-fold, facilitating the identification of genetic differences between...
Cited by 126 Related articles All 13 versions Web of Science: 99
- Development of a dual-index sequencing strategy and curation pipeline for analyzing amplicon sequence data on the MiSeq Illumina sequencing platform**
James J. Koopchik, Sarah L. Westcott, Neilson T. Baxter, Sarah K. Highlander, Patrick D. Schloss - Applied and environmental microbiology • 2013 - Am Soc Microbiol
Previous demonstrations of the Illumina-based platform have focused primarily on quantifying the beta-diversity between communities using distance... The OTU-based approach described here has been facilitated by reducing the sequencing error rate from 1.08 to 0.01...
Cited by 1174 Related articles All 9 versions Web of Science: 798

PubMed: illumina error rate

Format: Summary - Sort by: Best Match - Per page: 20 -

Search results

Items: 1 to 20 of 212

Did you mean: **illuminate error rate** (4 items)

- Error rate for imputation from the Illumina BionanoSP50 chip to the Illumina BionanoHD chip.**
Schroden C, Dassonville R, Duroncq V, Bravum RF, Lund MS, Chen J, Liu Z, Gonzalez-Revo O, Pena J, Duet T.
Genet Sel Evol. 2014 Feb 4;46:10. doi: 10.1186/1297-9686-46-10.
PMID: 24495564 Free PMC Article
Similar articles
- Quorum: An Error Corrector for Illumina Reads.**
Margas G, Yorke JA, Zimin A.
PLoS One. 2015 Jun 17;10(6):e0130821. doi: 10.1371/journal.pone.0130821. eCollection 2015.
PMID: 26032032 Free PMC Article
Similar articles
- Monitoring Error Rates in Illumina Sequencing.**
Manley LJ, Ma D, Levine SS.
J Biomol Tech. 2010 Dec 27;1(12):125-128. Epub 2010 Sep 16.
PMID: 21872352 Free PMC Article
Similar articles

Results by year

Find related data

Database: Select

Best match search information

Journal: j16444585

Example 3. Search scenario: find out what is the error rate of the popular Illumina sequencing platform. Search phrase used in this scenario is simply 'illumina error rate'. SciRide finder outputs the error rate reported for the popular sequencing technology as reported in the literature. Other search engines however, output papers about the error rate of the technology. This shows the orthogonality of the approach of SciRide Finder with respect to other search engines.

The image displays three screenshots related to a search scenario for protein structures. The top-left screenshot shows the SciRide Finder interface, which identifies phrases like "All structures were downloaded from the Protein DataBank." and "These structures were then downloaded from the Protein Data Bank." in research papers. The top-right screenshot shows a search result on PubMed for "structures were downloaded from", listing several articles with their titles and publication details. The bottom screenshot shows a search result on PubMed for "structures were downloaded from", displaying a list of articles and a "Results by year" chart showing the number of results from 1956 to 2018.

Example 5. Search scenario: Three dimensional molecular structures define the functions of proteins and studying them is facilitated via the Protein Data Bank (PDB) which is a global repository of protein structures. As a basic example of searching for data in the literature we demonstrate a scenario where someone would like to find out ‘where does one download structures from’ – which is not a trivial question for non-specialists. Searching for phrase ‘structures were downloaded from’. SciRide Finder immediately identifies phrases pointing to the PDB. Google Scholar and Semantic Scholar identify non-protein structure papers from non-medical literature because of their wide scope. Results on PubMed do not offer immediate actionable insight from the results without reading the papers returned and it is not clear whether the information would be contained in these publications. Furthermore, the word ‘downloaded’ is not typically present in the immediate results from other search engines.

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ipinski rule five violate

Search About/Help

Recent Paper: Drug Design, Development and Therapy: Multipotent (cholinesterase-inhibitor) esterase inhibitors for the treatment of Alzheimer's disease: design, synthesis, biochemical evaluation, ADME, molecular modeling, and QM4 analysis of novel diacylcholinyl pyridine

"Therefore, these structures violate the Lipinski's rule of five."

Authors cited by the source:
PMID: 11258263

Recent Paper: Antibiotics: The Search for Better Antibiotics: An in-Silico Investigation of Antifololate Phosphonates

"A Compounds shown in red font violate Lipinski's rule-of-five."

Authors cited by the source:
PMID: 25222798

Recent Paper: PPAR- α Selective Thiazolidinedione Inhibits *in-Vitro* and *in-Vivo* Activation of NF- κ B Pathway in Spleen and in Spleen T-lymphocytes

"Natural products including the isolated phytochemicals generally violate the Lipinski's Rule of Five."

Authors cited by the source:
PMID: 18835132
PMID: 18835133
PMID: 22222798

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Softening the Rule of Five—where to draw the line?
Jacobin Deth, Marlene Meudrich, Christine E. Kaiser, Gerald M. Maggioni • Biorganic & medicinal chemistry • 2012

In order to improve the discovery and development of new drugs, a broad effort is being made to assess the "drug-like" properties of molecules in early stages of the discovery-research process. Although there are numerous approaches to this problem, perhaps the simplest and most widespread one is that developed by Chris Lipinski and his co-workers at... (More)

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Oral Administration of Peptide-Based Drugs: Beyond Lipinski's Rule.
Gabriela Bezerra dos Santos, A. Simeoni, Flávia S. Estevy • ChemMedChem • 2018

The use of peptides in therapy presents several limitations, from physicochemical characteristics to inadequate pharmacokinetic profiles for oral absorption. As peptides are gaining importance in the therapeutic arsenal, there is an increasing need to rationalize the main characteristics of this compound class in the market. Therefore, we performed an... (More)

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Ask the experts: past, present and future of the rule of five.
Jacobin D. Deth, Mitesh S. Datar, Paul Lesson, Coleen A. Abad-Zanillo • Future medicinal chemistry • 2013

Coined in 1997, by Christopher Lipinski et al., the rule of five (Ro5) comprises a set of parameters that determine drug-likeness for oral delivery. The parameters are as follows: no more than five hydrogen bond donors (nitrogen or oxygen atoms with one or more hydrogen atoms), no more than ten hydrogen bond acceptors (nitrogen or oxygen atoms), a molecular... (More)

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Experimental and computational approaches to estimate solubility and permeability in drug discovery and development settings
C. Lipinski, F. Lombardo, B.W. Dominy, ... 1997 - Elsevier
Experimental and computational approaches to estimate solubility and permeability in discovery and development settings are described. In the discovery setting the rule of 5 predicts that poor absorption or permeation is more likely when there are more than 5 H-bond donors, a molecular weight greater than 500, the presence of a high topological polar surface area, and/or a high clogP value.

Poor aqueous solubility—an industry wide problem in drug discovery
C. Lipinski - Am Pharm Rev, 2002 - researchgate.net
Properties important for drug oral activity have become worse with time. The details of what is likely to go wrong depend generally on the method of lead discovery, but, whatever the method, it is now more difficult to discover orally active drugs (1). We now understand the

The impact of natural products upon modern drug discovery
G. Scapozza - Current opinion in chemical biology, 2008 - Elsevier
... Meanwhile, it is useful to keep in mind that the 'rules' are in fact guidelines [15 -] and that 20% of all oral drugs violate at least one rule. Lipinski has noted [16 -] that many natural products remain bioavailable despite violating the Rule of Five ...

How To

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Find related data
Database: Select

Search results
Items: 5

1. **Softening the Rule of Five—where to draw the line?**
Jacobin Deth, Marlene Meudrich, Christine E. Kaiser, Gerald M. Maggioni G.
Biorg Med Chem. 2012 Sep; 16(9):5345-51. doi: 10.1016/j.bmc.2011.11.064. Epub 2011 Dec 17.
PMID: 22221150 Free PMC Article
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2. **Computational finding of potential inhibitor for Cytochrome P450 Mono-oxygenases Enzyme of Mycobacterium tuberculosis.**
Sharma A, Subbiah KK, Robine O, Chaturvedi I, Nigam A, Sharma N, Chaudhary PP.
Bioinform. 2012;18(19):631-7. doi: 10.6026/9732063006931. Epub 2012 Oct 1.
PMID: 23144523 Free PMC article
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3. **Chemical investigation of drug-like compounds from the Australian tree, *Neotibeaosabatata*.**
Tran TD, Pham NB, Fehner G, Quinn RJ.
Biorg Med Chem Lett. 2010 Oct 1;20(19):5869-63. doi: 10.1016/j.bmcl.2010.07.100. Epub 2010 Aug 1.
PMID: 20752070
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Example 6. Search scenario: Lipinski Rule of Five is a standard way to assess viability of pharmaceuticals. Developing an understanding of the implications of violation of these rules is important for pharmaceutical applications. We use search phrase 'lipinski rule five violated' to demonstrate the results from several search engines. SciRide Finder identifies examples where certain molecules violate the said rules, giving a researcher strong indication towards reading further to find out what are the implications of such violation. Other search engines however return publications on the Lipinski Rule of Five, do not show the word 'violate' in many of the presented results, offering limited clues as to which paper can answer the question.

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deep learning was applied

Search About/Help

deep learning was applied

Source Paper: *Brain Sciences, Alzheimer's Disease Early Diagnosis Using DeepLearning-Based Semi-Supervised Learning*
"In previous works, deep learning was applied to capture high-level latent features from the images."
Papers cited by the source:
PMID: 25042445 (Cited by 2 health documents), 2nd most

Source Paper: *Computer Journal of Medical Research, Using automated feature features to determine the probability for missing of a tumor on mammography, for use ultrasonid*
"In unsupervised deep learning was applied to texture features from mammograms."
Papers cited by the source:
PMID: 20072120

Source Paper: *Human Genetics, Novel bioinformatics developments for cancer sequencing*
"Notably, the DeepSEA method was based on a Deep learning algorithm, which is a form of machine learning that is increasingly being applied to biological problems (Alipanahi et al.2014)."
Papers cited by the source:
PMID: 20170185 (Cited by 3 health documents), 1th most

deep learning was applied

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Multimodal Deep Learning
Jouan Ngiam, Adria Khosla, Minasa Kim, Junhan Nam, Honglak Lee, Andrew Y. Ng • ICML • 2011
Deep networks have been successfully applied to unsupervised feature learning for single modalities (e.g., text, images or audio). In this work, we propose a novel application of deep networks to learn features over multiple modalities. We present a series of tasks for multimodal learning and show how to train deep networks that learn features to address... (More)
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Playing Atari with Deep Reinforcement Learning
Volodymyr Mnih, Koray Kavukcuoglu, 4 authors Martin A. Bellemare • ArXiv • 2013
We present the first deep learning model to successfully learn control policies directly from high-dimensional sensory input using reinforcement learning. The model is a convolutional neural network, trained with a variant of Q-learning, whose input is raw pixels and whose output is a value function estimating future rewards. We apply our method to seven... (More)
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Deep Residual Learning for Image Recognition
Kaiming He, Xiangyu Zhang, Shaoqing Ren, Jian Sun • 2016 IEEE Conference on Computer Vision and... • 2016
Deeper neural networks are more difficult to train. We present a residual learning framework to ease the training of networks that are substantially deeper than those used previously. We explicitly reformulate the layers as learning residual functions with reference to the layer inputs, instead of learning unreferenced functions. We provide comprehensive... (More)
1301 2,393 View on IEEE Similar Papers View Slides More...

Results by year
Line graph showing search results from 2016 to 2018. The y-axis represents the number of results, and the x-axis represents the year. The data points are approximately: 2016: 1036, 2017: 1036, 2018: 1036.

deep learning was applied

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Deep learning
Y. LeCun, Y. Bengio, G. Hinton • Nature, 2015 • nature.com
... below. Then a non-linear function $f_z(\cdot)$ is applied to z to get the output of the unit. For simplicity, we have omitted bias terms. The ... Many applications of deep learning use feedforward neural network architectures (Fig. 1), which ...
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[PDF] Multimodal deep learning
J. Ngiam, A. Khosla, M. Kim, J. Nam, H. Lee, ... • on machine learning ... 2011 • ai.stanford.edu
... Abstract Deep networks have been successfully applied to unsupervised feature learning for single modalities (eg. text, images or audio). In this work, we propose a novel application of deep networks to learn features over multiple modalities ...
☆ Cited by 969 Related articles All 25 versions 10

On optimization methods for deep learning
Q. Le, J. Ngiam, A. Coates, A. Lahiri, ... • on Machine Learning, 2011 • dl.acm.org
... 20. LeCun, Y., Bottou, L., Bengio, Y., and Haffner, P. Gradient based learning applied to document recognition ... 23. Honglak Lee, Chaitanya Ekanadham, Andrew Y. Ng. Sparse deep belief net model for visual area V2, Proceedings of the 20th International Conference on Neural ...
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1. **Bothner by abstractness or engaged by cohesion? Experts' explanations enhance novices' deep-learning.**
Lachner A, Nückles M.
J Exp Psychol Appl. 2015 Mar;21(1):101-15. doi: 10.1037/xap0000038. Epub 2014 Dec 1.
PMID: 25437782
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2. **The Next Era: Deep Learning in Pharmaceutical Research.**
Ekins S.
Pharm Res. 2016 Nov;33(11):2594-603. doi: 10.1007/s11095-016-2029-7. Epub 2016 Sep 6.
PMID: 27396991 Free PMC Article
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3. **Do learning approaches of medical students affect their satisfaction with problem-based learning?**
Gurpreet S, Khatk C, Tahir C, Akdogan I, Marnakli S.
Adv Physiol Educ. 2013 Mar;37(1):85-8. doi: 10.1152/advan.00119.2012.
PMID: 23471254
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PMCID Images search was applied

Example 7. Search Scenario: see how Deep Learning (new revolutionary machine learning paradigm) is being applied. Search phrase used here is 'deep learning was applied'. Because of the wide scope, Google Scholar and Semantic Scholar return important publications in Deep Learning in general. SciRide Finder gives indication how Deep Learning is being used in image processing and where more information can be found. PubMed appears to associate 'learning' with psychological studies.