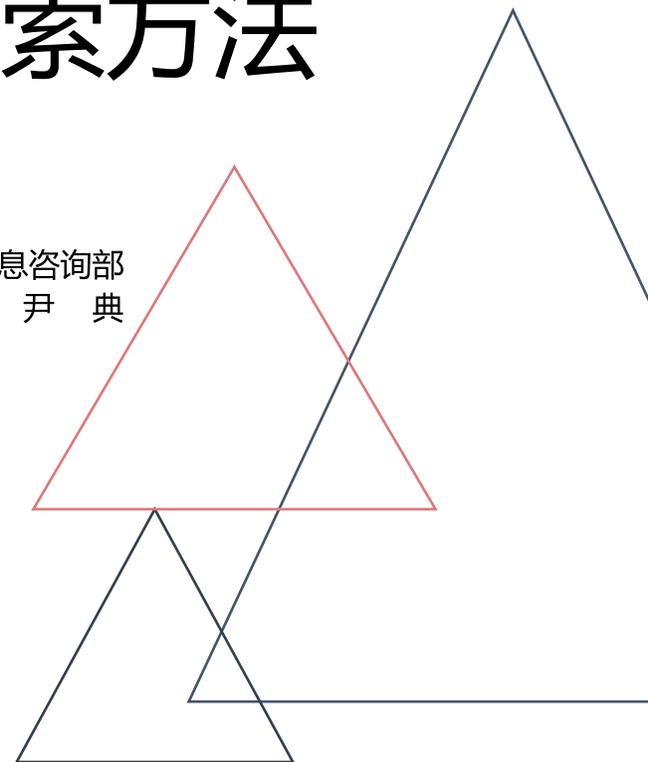


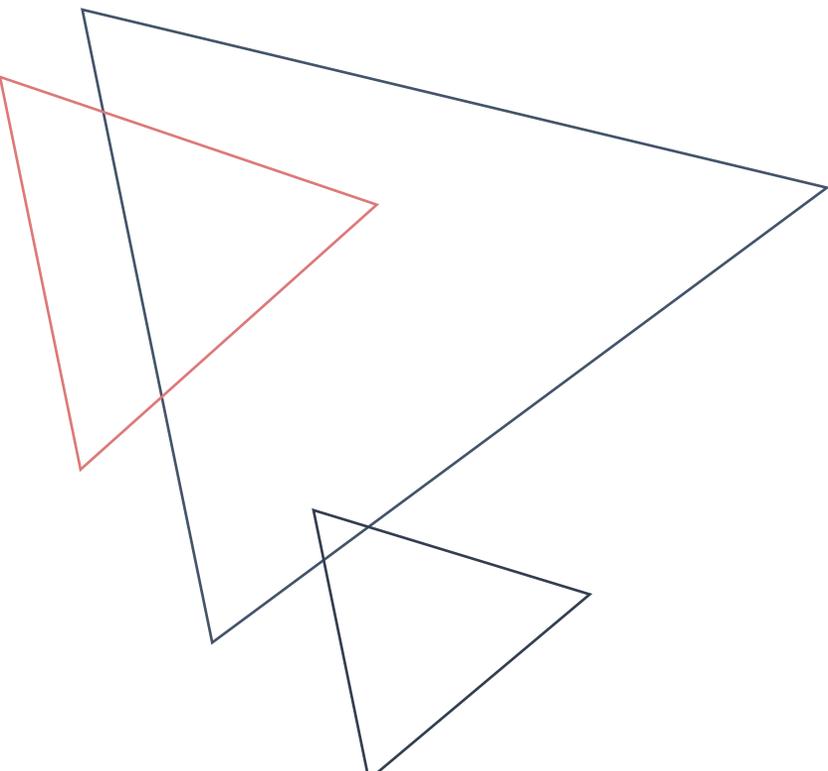


# 信息及电气工程学科 常用数据库检索方法

南开大学图书馆 信息咨询部  
尹 典



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## 信息及电气工程学科主要文献资源

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2

## EI ( Compendex ) 检索方法

EI ( Compendex ) 数据库的基本情况简介、常用检索方法、EI收录等相关知识。

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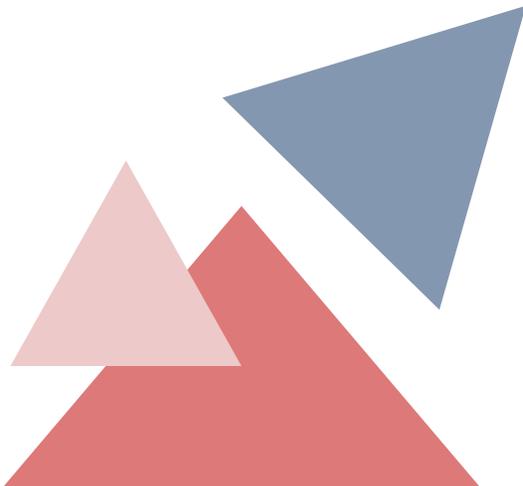
## IEEE/IET Electronic Library (IEL)检索方法

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4

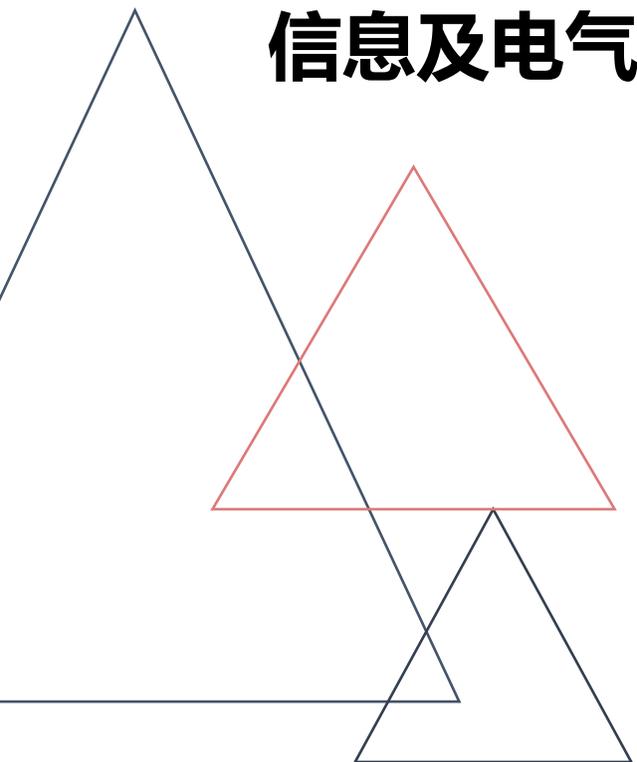
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# PART ONE

## 信息及电气工程学科主要文献资源





## 信息及电气工程学科

- ◆ 信息科学是信息时代的标志性学科。通信工程界认为它应当是Shannon信息论的扩展；计算机科学界认为它就是计算机科学的别称；控制工程界认为它是自动化的孪生界面；系统科学界则认为它是一切系统（包括生物系统和非生物系统）共同的信息理论，也有人认为是图书馆学或情报学的现代名称.....

——钟义信《信息科学原理》第5版，2013

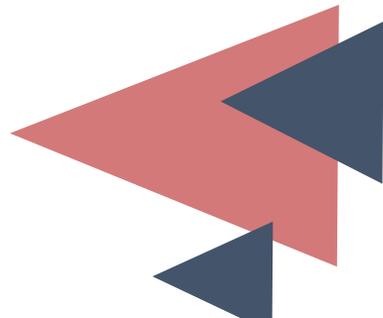
- ◆ 信息科学是研究信息运动规律和应用方法的科学，是由信息论、控制论、计算机理论、人工智能理论和系统论相互渗透、相互结合而成的一门新兴综合性科学。其支柱为信息论、系统论和控制论。

——《百度百科. 信息科学词条》

- ◆ 电气工程（Electrical Engineering），简称EE，是现代科技领域中的核心学科和关键学科。
- ◆ 传统的电气工程定义为用于创造产生电气与电子系统的有关学科的总和。此定义本十分宽泛，但随着科学技术的飞速发展，21世纪的电气工程概念已经远远超出上述定义的范畴。**当今电气工程涵盖了几乎所有与电子、光子有关的工程行为。**

——《百度百科. 电气工程词条》

- ◆ 工学门类下一级学科：  
电气工程；电子科学与技术；信息与通信工程；控制科学与工程；计算机科学与技术





## 文献类型及主要数据库



### 文献类型

- ◆ 图书
- ◆ 期刊
- ◆ 报纸
  
- ◆ 会议文献
- ◆ 专利文献
- ◆ 学位论文
- ◆ 技术报告
- ◆ 技术标准



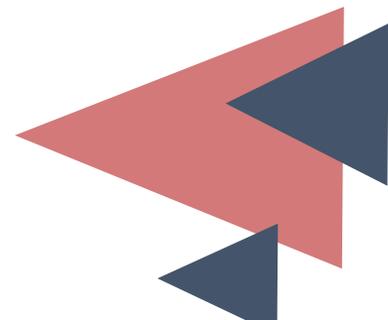
### 主要数据库

#### 文摘类数据库

- ◆ *EI (Compendex)* 数据库
- ◆ Web of Science
  - ◆ 科学引文索引SCI
  - ◆ 科技会议录索引CPCI
  - ◆ 德温特专利数据库
- ◆ Scopus ( 收录量最大的文摘索引库 )
- ◆ Proquest Digital Dissertations  
( PQDT , 欧美学位论文摘要及索引 )

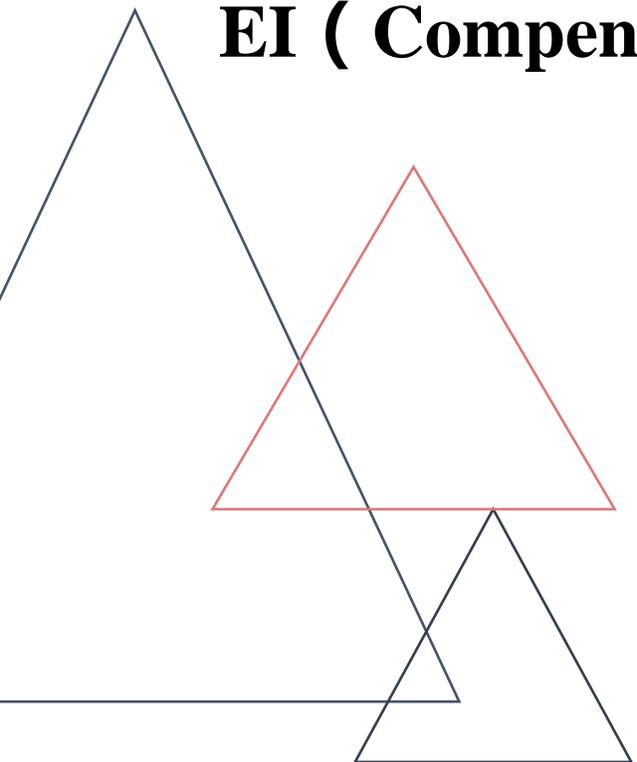
#### 全文类数据库

- ◆ *IEEE/IET Electronic Library (IEL)*
- ◆ *ACM Digital Library*
- ◆ ScienceDirect
- ◆ SpringerLink ( 电子期刊及图书 )



# PART TWO

## EI ( Compendex ) 数据库检索方法





## Engineering Index 简介

- EI (Engineering Index, 工程引文) 数据库是由Elsevier Engineering Information 公司出版, 为工程类文摘数据库。
- 创刊于1884年, 是全球最全面的工程技术领域的文摘类检索出版物, 世界四大科技检索工具之一(EI, SCI, ISTP, ISR)。
- 收录范围: 1969年至今, 50余个国家, 15种文字的5,600多种工程类期刊、会议论文集和技术报告的参考文献和摘要, 不报道纯理论性文献和专利文献。

### 190个应用科学与工程类别

- ✓核技术
- ✓生物工程
- ✓交通运输
- ✓化学和工艺工程
- ✓照明和光学技术
- ✓农业工程和食品技术
- ✓计算机和数据处理
- ✓应用物理
- ✓电子和通信
- ✓控制工程
- ✓土木工程
- ✓机械工程
- ✓材料工程
- ✓石油
- ✓宇航
- ✓汽车工程
- .....
- 以及这些领域的子学科

### EI ( Compendex ) 数据库

- ✓ 1884年一群立志于科研进展共享、科研成果共享的工程师创办了工程信息有限公司(EI);
- ✓ 1100万项记录 ( 1969年至今 );
- ✓ 每年新增65万项记录;
- ✓ 每周更新, 增加1.25万笔新文献信息;
- ✓ 工程索引过刊: 1884-1968年 (超过170万项记录);
- ✓ 90%的文献语种是英文, 1992年开始收录中国期刊



## Engineering Index 简介

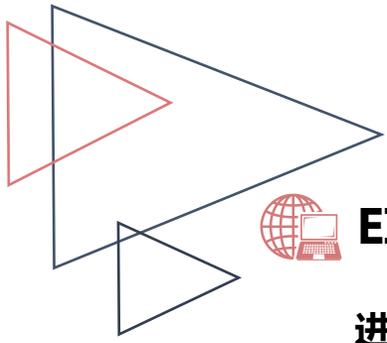
- EI的涉猎范围几乎遍及各个工程技术学科，在我国学术界，除被用来作为检索工具以外，在EI中被收录论文的数量还被用于作为评价科研机构或科研人员学术成就的一项客观指标。
- EI(Compendex)数据库为文摘类数据库，而非全文数据库，一般只收录文献的题录、摘要、关键词、参考文献并加上主题词、分类号等。
- Engineering information Inc. ，现隶属于Elsevier旗下。使用EI进行检索时，在文献检索记录页面上有”Full text” 选项，可以在Elsevier上获得全文。
- EI收录的论文分为两个档次，一种是《工程索引》的光盘版（ EI Compendex ），由美国工程信息公司提供，数据从2600余种国际工程期刊、科技报告和会议录中选取；另一种EI Compendex Web是《工程索引》的网络版，内容包括原来光盘版（ EI Compendex ）和后来扩展的部分（ EI PageOne ），该数据库侧重提供应用科学和工程领域的文摘索引信息。二者的区别在于是否有主题词和分类号标引。



~~EI 全文收录~~



EI 收录



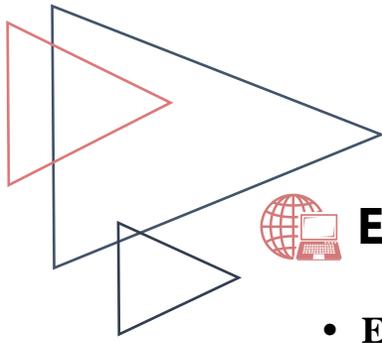
## EI 检索方法

### 进入Engineering Village数据库

- 通过图书馆网页链接
- 或通过Engineering Village 的网址  
<http://www.engineeringvillage.com>

### 常用数据库

- |                              |                           |                                 |                  |
|------------------------------|---------------------------|---------------------------------|------------------|
| • ACS                        | • JSTOR                   | • SciFinder                     | • 超星电子书          |
| • EI Village                 | • Nature                  | • Springer                      | • 读秀学术搜索         |
| • Emerald                    | • PNAS                    | • Taylor & Francis SSH          | • 万方数字化期刊        |
| • Gale Scholar               | • RSC                     | • Web of Science(SCI/SSCI/CPCI) | • 中国共产党思想理论资源数据库 |
| • IEEE/IET ElectronicLibrary | • Science                 | • Wiley                         | • 中国期刊全文数据库 (维普) |
| • InCites/ESI/JCR            | • ScienceDirect(Elsevier) | • CNKI系列全文数据库                   | • 中科院JCR期刊分区表    |



## EI 检索方法

- EI检索界面

Engineering Village™

Search Alerts 0 Selected records 0 ? Create account Login

Quick search: All fields for e.g. (an... social media}

Search Turn off AutoSuggest | + Add search field | Reset form

Databases ^ Date v Language v Document type v Sort by v Browse indexes

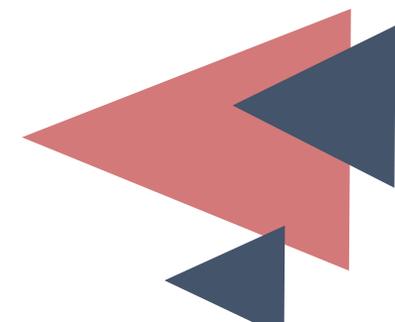
Compendex

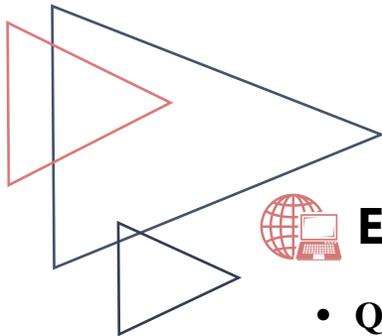
Quick Expert Thesaurus Engineering School Profile

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RELX Group™





## EI 检索方法

- Quick search: 常用、当前默认的检索方法

The screenshot shows the Engineering Village search interface. At the top left is the Engineering Village logo. The main search bar contains the text "Quick search:" and "All fields" (both highlighted with red boxes). The search query is "e.g. (artificial intelligence OR intelligent computing) AND {social media}". Below the search bar, there are several filters: "All fields" (highlighted with a red box), "Browse indexes", "Autostemming", "Discipline", and "Treatment" (highlighted with a red box). A dropdown menu for "Treatment" is open, showing options: "All Treatments" (selected), "Experimental", "Management aspects", "Applications", "General review", "Numerical", "Biographical", "Historical", "Theoretical", "Economic", and "Literature review". The "Research Type" (研究类型) label is placed near the "Biographical" option. At the bottom left, there is an "ELSEVIER" logo and a "Copy" button. At the bottom right, there is a "RELX Group" logo. The page also includes navigation links like "About EI", "History of EI", "Abstract", "Author", "Author affiliation", and "Title".



## EI 检索方法

- 检索字段说明

### » EI main heading

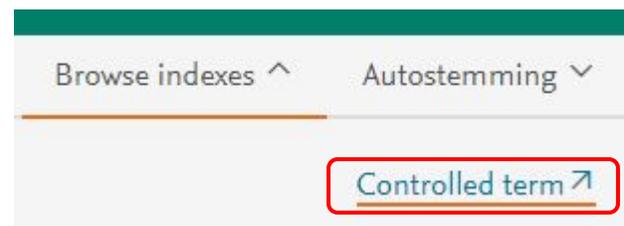
- EI Main Heading (主标题词) 数据库中每个记录均被赋予一个主标题词, 用来表示文献的主题思想 (Main Heading)。而其余的主题词用来描述文献中所涉及的其它的概念。

### » EI controlled term

- EI controlled term (受控词) 来自EI叙词表, 它从专业的角度将同一概念的主题进行归类, 因此使用受控词进行检索比较准确。



? 怎样查找 EI 控词表?





## EI 检索方法

### • 检索规则

#### » 输入规则

- 检索词输入不区分大小
- 输入框按照顺序输入

#### » 逻辑算符

- 逻辑算符用AND、OR、NOT 表示
- 举例：**German and English not Chinese**



EI基本检索规则可参考以下链接：

[https://service.elsevier.com/app/answers/detail/a\\_id/25941/supporthub/engineering-village/#syntax](https://service.elsevier.com/app/answers/detail/a_id/25941/supporthub/engineering-village/#syntax)

输入的关键词	检出文献数目
“solar energy”	91782
{solar energy}	60380
solar NEAR energy	68080
solar energy	91782
solar and energy	91782
solar* energy*	91784
solar not energy	136554
solar or energy	1243540



## EI 检索方法

- 检索规则

### 精确检索

- 要检索得更精确，词组或短语需用引号或括号标引。
- 举例： "International Space Station"或{International Space Station}  
含义上相当于International ONEAR/0 Space ONER/0 Station

### 邻近算符:NEAR ONEAR

- 邻近算符NEAR 和 ONEAR：使用NEAR和ONEAR可以检索相近的检索词，但是NEAR和ONEAR不能和截词符、通配符、圆括号、大括号和引号一起使用。
- 举例：
  - Laser NEAR/4 diode**  
表示两词之间可以插入0到4个字母/词，词序可以颠倒
  - Laser NEAR/0 diode**  
表示两词之间紧密相连，词序可以颠倒
  - Laser ONEAR/4 diode**  
表示两词之间可以插入0到4个字母/词，词序不可以颠倒
  - Laser NEAR diode**  
系统默认为Laser NEAR/4 diode



## EI 检索方法

### • 检索规则

#### » 特殊字符

- 除了a-z,A-Z, 0-9,?,\*.,#,( )或{ }等符号外，其它符号均视为特殊符号，检索时将被忽略。除非用引号或括号将其括起，如：{n<7}，此时特殊字符将被一个空格代替。

#### » 连接词的使用

- 如果用短语检索时，允许句中使用连接词(and, or, not, near, onear)，但该语句必须用引号或括号括起。
- 举例： {block and tackle}  
“water craft parts and equipment”

#### » 逻辑组配运行顺序

- 如果输入三个词/短语，快速检索总是先合并检索前两个词/短语，然后再检索第三个词/短语
- 举例： a AND b OR c 表示为 (a AND b) OR c  
a OR b AND c 表示为 (a OR b) AND c  
a OR b NOT c 表示为 (a OR b) NOT c



## EI 检索方法

### • 检索规则

#### » 通配符

- 截词符：用\*表示，放置在词首、词尾、词中，可代替零或多个字母，通过使用截词命令能够检索到截词符前后字母相同的所有词。
- 举例： comput\*可以将computer, computerized, computation等作为检索词。  
\*sorption可以将absorption, adsorption, desorption等作为检索词。  
h\*emoglobin可以将hemoglobin, haemoglobin等作为检索词。
- 截词符与引号或大括号不可同时使用。
- 屏蔽检索?：使用?可以代替一个字符，以防止由于拼法不同或众数异形等原因造成的漏检。
- 举例： wom?n可以检索到women, woman  
fib??board可以检索到fiberboard, fibreboard

#### » 作者检索

- EI数据库中作者有九种写法，以袁晓洁 ( Yuan Xiaojie ) 老师为例：
- Yuan xiaojie or Yuan xiao-jie or xiaojie yuan or xiao-jie yuan or
- Yuan xj or Yuan x-j or Yuan x or xiaojie y or xiao-jie y
- 同时也可以使用截词符\*，以三种形式来代替，并用其他检索字段来限制，如：
- Yuan X\* or xiaojie y\* or xiao-jie y\*



## EI 检索方法

- Expert search: 专业/高级检索

Engineering Village™

Search ▾ Alerts 0 Selected records 0

Expert search:

e.g. ((ad\*hoc networks WN CV OR wireless sensor networks WN CV) AND {protocols} WN ALL) AND (wireless WN PN OR network WN PN)

### Expert

- 快速检索中的规则适用于高级检索。
- 检索式就是把检索词用选定的数据库所支持的各种检索算符连接起来组成的式子。
- 高级检索采用 within 命令 (wn) 和字段码、布尔运算符、括号等组合成检索式。
- 举例： “linear induction motors” wn KY  
           “international space station” wn ALL and French wn LA  
           Apr 13 1992 wn CF
- 可使用括号指定检索的顺序，括号内的术语和操作优先于括号外的术语和操作。也可使用多重括号。
- 注：在做高级检索中，系统不会自动执行词干检索。若需要做词干检索，则要在检索词前加上 “\$” 符号或勾选掉 “Autostemming off” 取消词干检索。



## EI 检索方法

- Expert search: 专业/高级检索



New  
Engineering Village

Search ▾

Results ▾ <sup>1</sup>

Alerts <sup>0</sup>

Selected records <sup>0</sup>

More ▾

Expert search:

*e.g. ((ad\*hoc networks WN CV OR wireless sensor networks WN CV) AND {protocols} WN ALL) AND (wireless WN PN OR network WN PN)*

Databases ▾

Date ▾

Sort by ▾

Autostemming ▾

Search codes ▾

Browse indexes ▾

Database

Code = Field

Code = Field

c = Compendex

AB = Abstract (c)

BN = ISBN (c)

AN = Accession number (c)

SN = ISSN (c)

AF = Affiliation/Assignee (c)

SU = Issue (c)

ALL = All fields (c)

LA = Language (c)

AU = Author/Inventor (c)

NU = see Numerical Data Codes (c)

CL = Classification code (c)

PA = Patent application date (c)

CN = CODEN (c)

PI = Patent issue date (c)

CC = Conference code (c)

PM = Patent number (c)

CF = Conference information (c)

YR = Publication year (c)

Codes displayed will depend on your current database selection

检索字段代码可以在“Search codes”选项卡下找到



## EI 检索方法

- Thesaurus search: 叙词检索

### ? EI叙词表是什么?

- 叙词表是由专业的规范词组成，它可以将同一主题不同表述的词，按主题内容规范在标准的专业词下，避免了由于词汇书写不同造成漏检，或词义概念混淆导致错检的问题。用户利用叙词表可从主题角度检索文献，进而提高文献的查准率。

### ? 为什么需要叙词检索?

- 从文章中选词进行检索易漏检或误检
- 一个概念有多种表示——导致漏检 (检索时需要收集同义词，费时麻烦且易漏检)
- 一个词可以表示多个概念——导致误检



### 举例

- 高级检索中检索 “cell wn ti”
- 检索 solar cells 与 solar batteries



# EI 检索方法

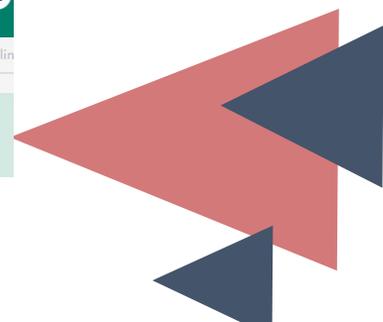
- Thesaurus search: 叙词检索
- 高级检索中检索 “cell wn ti”

- 检索 solar cells 与 solar batteries

Engineering Village search results for "cell wn ti". The search bar shows "Expert search: (cell wn ti)". The results page displays "167050 records found in Compendex for 1884-2019: cell wn ti". A list of search results is shown, with the first result highlighted: "Er and Mg co-doped TiO2 nanorod arrays and improvement of photovoltaic property in perovskite solar cell". The term "solar cell" is circled in red. A red dashed box highlights the "cell wn ti" search criteria in the search bar.

Engineering Village search results for "solar cells". The search bar shows "Quick search: All fields for solar cells". The results page displays "152467 records found in Compendex for 1884-2019: ((solar cells) WN All fields)". Suggested terms include "Photovoltaic Cells" and "Solar Power Generation". The number "152467 records" is circled in red.

Engineering Village search results for "solar batteries". The search bar shows "Quick search: All fields for solar batteries". The results page displays "14429 records found in Compendex for 1884-2019: ((solar batteries) WN All fields)". Suggested terms include "Solar Cells", "Solar Energy", and "Photovoltaic Cells". The number "14429 records" is circled in red.





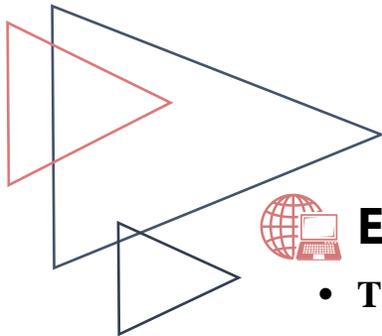
## EI 检索方法

- **Thesaurus search: 叙词检索**

- 利用叙词表可以从主题概念的角度扩展或缩小检索范围。
- 叙词表提供三种检索方式：
  - Vocabulary search ( 主表查询 ) : 可判断被检索词在叙词表中的正确表达方式；
  - Exact term ( 精确查询 ) : 用以判断输入词是否为叙词表中的词；
  - Browse ( 按字顺查询 )

The screenshot shows the Engineering Village search interface. At the top left is the Engineering Village logo. To the right are navigation links: Search, Results (with a '3' badge), Alerts (with a '0' badge), and Selected. Below this is a search bar with a dropdown menu open. The dropdown menu is titled 'Vocabulary search' and contains three options: 'Vocabulary search' (selected), 'Exact term', and 'Browse'. The search bar contains the text 'e.g. computer simulation' and a search button. The 'Thesaurus search:' label is highlighted with a red box.





## EI 检索方法

- Thesaurus search: 叙词检索

选择叙词检索

Thesaurus search: Vocabulary search for neural networks 输入检索词

Database:  Compendex

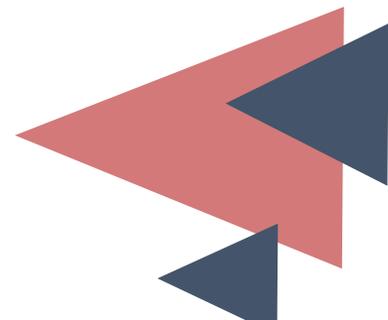
27 matching terms

neural networks 1 of 3 >

匹配词条

Term	Term
<input type="checkbox"/> Artificial intelligence	<input type="checkbox"/> Cellular neural networks
<input type="checkbox"/> Artificial neural networks	<input type="checkbox"/> Deep learning
<input type="checkbox"/> Backpropagation	<input type="checkbox"/> Deep neural networks
<input type="checkbox"/> Biocybernetics	<input type="checkbox"/> Feedback neural networks
<input type="checkbox"/> Brain models	<input type="checkbox"/> Feedforward neural networks

选择词条





# EI 检索方法

- Thesaurus search: 叙词检索

检索结果

Exact term results ^

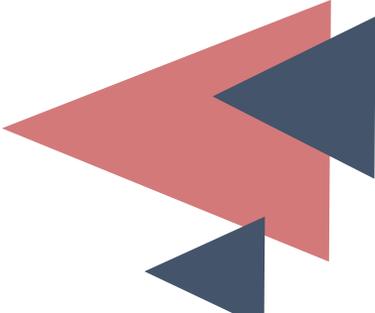
neural networks > Artificial neural networks > Neural networks

Neural networks 点击词条，展开本词条在叙词表中的层级关系

For: Artificial neural networks; Neural nets; Perceptrons

<p><b>Broader terms</b></p> <p><input type="checkbox"/> Artificial intelligence</p> <p><b>上位词</b></p>	<p><b>Related terms</b></p> <p><input type="checkbox"/> Backpropagation</p> <p><input type="checkbox"/> Biocybernetics</p> <p><input type="checkbox"/> Brain models</p> <p><input type="checkbox"/> Deep learning</p> <p><input type="checkbox"/> Deep neural networks</p> <p><input type="checkbox"/> Independent component analysis</p> <p><input type="checkbox"/> Intelligent computing</p> <p><input type="checkbox"/> Learning systems</p> <p><input type="checkbox"/> Long short-term memory</p> <p><input type="checkbox"/> Memory architecture</p> <p><input type="checkbox"/> Nearest neighbor search</p> <p><input type="checkbox"/> Neurophysiology</p> <p><input type="checkbox"/> Particle swarm optimization (PSO)</p> <p><b>相关叙词</b></p>	<p><b>Narrower terms</b></p> <p><input type="checkbox"/> Cellular neural networks</p> <p><input type="checkbox"/> Feedforward neural networks</p> <p><input type="checkbox"/> Fuzzy neural networks</p> <p><input type="checkbox"/> Multilayer neural networks</p> <p><input type="checkbox"/> Recurrent neural networks</p> <p><input type="checkbox"/> Self organizing maps</p> <p><b>下位词</b></p>
---	--	---

- 词条下方会出现：上位词、相关词、下位词。
- 可以根据词条释义，帮助我们找到合适的叙词。





## EI 检索方法

- Thesaurus search: 叙词检索

- 根据给出的叙词列表选择需要的检索词条。
- 已选择的词条，同时会进入Selected term(s)，根据具体的检索主题，选择逻辑 'OR'或 'AND'，执行检索。

Exact term results ^

Neural networks

Neural networks

For: Artificial neural networks; Neural nets; Perceptr Selected term(s) >

Broader terms

Artificial intelligence

Related terms

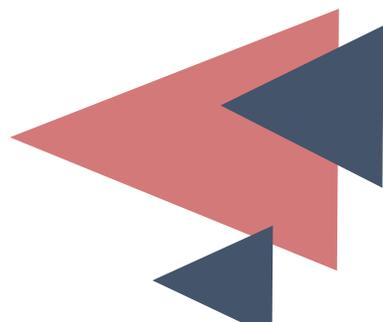
- Backpropag;
- Biocybernet
- Brain model
- Deep learnir
- Deep neural
- Independen
- Intelligent computing
- Learning systems
- Long short-term memory
- Memory architecture
- Nearest neighbor search
- Neurophysiology
- Particle swarm optimization (PSO)

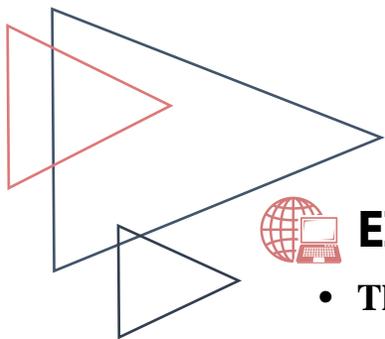
- Neural networks ×
- Backpropagation ×
- Feedforward neural networks ×
- Fuzzy neural networks ×

AND

OR

Reset form





## EI 检索方法

- Thesaurus search: 叙词检索

### 检索结果

 **Engineering Village** Search ▾ Results ▾ <sup>1</sup> Alerts <sup>0</sup> Selected records <sup>0</sup> More ▾

Thesaurus search:  for

Database:  Compendex

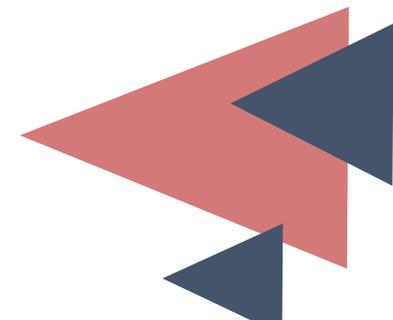
Exact term results ▾

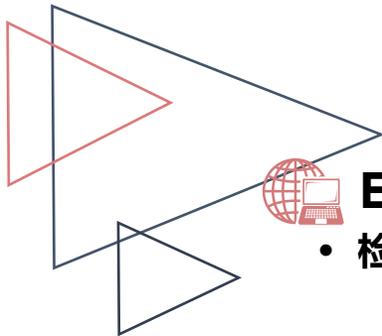
221764 records found in Compendex for 1884-2019: {{{{Neural networks} WN CV} OR {{Backpropagation} WN CV} OR {{Feedforward neural networks} WN CV} OR {{Fuzzy neural networks} WN CV}}}

[Alert](#) [Save](#) [RSS](#)



found in Compendex for 1884-2019: {{{{Neural networks} WN CV} OR {{Backpropagation} WN CV} OR {{Feedforward neural networks} WN CV} OR {{Fuzzy neural networks} WN CV}}}





# EI 检索结果

## • 检索结果页面

快速检索 ( 所有字段 ) :

339243条文章摘要记录 / Compendex数据库

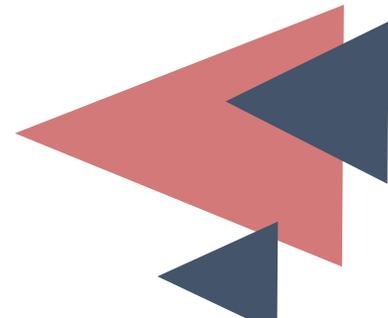
The screenshot shows the EI Compendex search results page. At the top, the search bar contains the query "Neural networks". Below the search bar, there are filters for "Databases", "Date", "Language", "Document type", "Sort by", "Browse indexes", "Autostemming", "Discipline", and "Treatment". The results section shows "339243 records found in Compendex for 1884-2019: ((Neural networks) WN All fields)". On the left, a "Refine" sidebar is open, showing a "Numeric filter" and a "By category" section with options like "Controlled vocabulary", "Document type", "Author", "Author affiliation", "Classification code", "Country", and "Language". On the right, a "Relevance" dropdown menu is open, showing options like "Date (Oldest)", "Date (Newest)", "Author (A-Z)", "Author (Z-A)", and "Source (A-Z)".

### 检索结果保存方

检索结果进一步处理分析 :

限制检索 / 图表显示 / 输出数据

可依照相关程度、日期、作者、文献来源、出版者排序(预设为相关度), 依降序或升幂规则排序





## EI 检索结果

- 文献内容：Abstract

The screenshot shows a record page from Engineering Village. At the top, there's a navigation bar with 'Search', 'Results' (1), 'Alerts' (0), 'Selected records' (1), and 'More'. There are also links for 'Create account' and 'Sign in'. Below the navigation bar, the record title is 'Ensemble of Convolutional Neural Networks for Face Recognition' by Mohanraj, V., Sibi Chakkaravarthy, S., and Vaidehi, V. The abstract is visible, and there are sections for 'Related Documents' and 'Tools in Scopus'. A red box highlights the 'Full text' button in the top left of the record area.

获取全文

相关更多  
文献记录

在Scopus中施引文献，  
可连接至Scopus数据库



## EI检索结果

### • 文献内容 : Detailed

#### Record

Record 1 from Compendex for: ((Neural networks) WN All fields) , 1884-2019

< Back to results

Full text



Abstract

Ensemble of Convolutional **Neural Networks** for Face Recognition

Detailed

Compendex Refs 17

Accession number: 20183805837704

Authors: Mohanraj, V. <sup>1</sup> ; Sibi Chakkaravarthy, S. <sup>1</sup> ; Vaidehi, V. <sup>2</sup>

Author affiliations : <sup>1</sup> Department of Electronics Engineering, Madras Institute of Technology, Anna University, Chennai, India  
<sup>2</sup> School of Computer Science and Engineering, VIT University, Chennai, India

Corresponding author: Mohanraj, V. ([mohanraj@mitindia.edu](mailto:mohanraj@mitindia.edu))

Source title: Advances in Intelligent Systems and Computing

Abbreviated source title: Adv. Intell. Sys. Comput.

Volume: 740

Issue date: 2019

Publication Year: 2019

Pages: 467-477

Language: English

ISSN: 21945357

Document type: Book chapter (CH)

Publisher: Springer Verlag

**Abstract:** Convolutional **Neural Networks** (CNN) are becoming increasingly popular in large-scale image recognition, classification, localization, and detection. Existing CNN models use the single model to extract the features and the recognition accuracy of these models is not adequate for real-time applications. In order to increase the recognition accuracy, an Ensemble of Convolutional **Neural Networks** (ECNN) based face recognition is proposed. The proposed model addresses the challenges of facial expression, aging, low resolution, and pose variations. The proposed ECNN model outperforms the existing state of the art models such as Inception-v3, VGG16, VGG19, Xception and ResNet50 CNN models with a Rank-5 accuracy of 97.12% on Web Face dataset and 100% on YouTube face dataset. © 2019, Springer Nature Singapore Pte Ltd.

Number of references: 17

Main heading: Face recognition

Controlled terms: Computer vision - Convolution - Learning systems - **Neural networks**

Uncontrolled terms: Convolutional **neural network** - Convolutional **Neural Networks** (CNN) - Facial Expressions - Low resolution - Pose variation - Real-time application - Recognition accuracy - State of the art

Classification code: 716.1Information Theory and Signal Processing - 73.5Computer Applications

Numerical data indexing: Percentage 1.00e+02%, Percentage 9.71e+01%

DOI: 10.1007/978-981-13-1280-9\_43

Databases: Compendex

**Accession number:**

文章检索号

**Authors :**

点选作者名字找到更多  
该作者发表的文章

**Author affiliation :**

每位作者的所属机构

**ISSN :**

找到更多关于这本期刊  
的文章

**Main heading :**

主标题词

**Controlled term :**

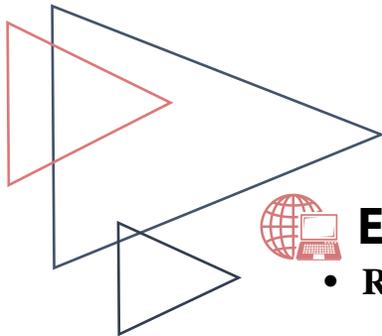
受控词

**Uncontrolled term :**

自由词

**Classification code :**

分类码



## EI检索结果

### • Refine Results

• 在 Refine 检索结果中：可依作者、作者所属机构、国家、文献种类等类别进行筛选：Limit to 或是 Exclude 一个或多个标目。



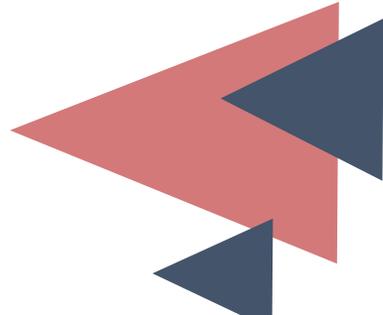
• 在 Refine 中可结合一个以上的分析项目，通过每篇标目前的勾选框勾选要使用的标目选项。

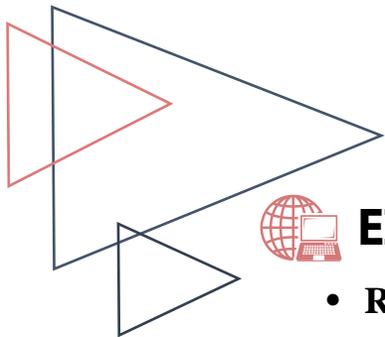
The screenshot displays the EI (Compendex) search results page for the query "neural networks". The search bar at the top shows "neural networks" and the results are sorted by "Relevance". A total of 339,243 records are found. The "Refine" sidebar on the left is highlighted with a red box and contains the following sections:

- Numeric filter:** A dropdown menu for numerical filtering.
- By category:** A section with "Limit to" and "Exclude" buttons, and an "Add a term" input field.
- Controlled vocabulary:** A list of categories with checkboxes and counts:
  - Neural Networks (19920)
  - Learning Systems (29876)
  - Forecasting (25894)
  - Mathematical Models (23407)
  - Computer Simulation (23163)
- Document type:** A list of document types with checkboxes and counts:
  - Conference article (190768)
  - Journal article (133045)
  - Conference proceeding (6942)
  - Article in Press (3785)
  - Book chapter (1718)
- Author:** A dropdown menu for author selection.
- Author affiliation:** A dropdown menu for author affiliation selection.
- Classification code:** A dropdown menu for classification code selection.
- Country:** A dropdown menu for country selection.
- Language:** A dropdown menu for language selection.
- Year:** A dropdown menu for year selection.
- Source title:** A dropdown menu for source title selection.
- Publisher:** A dropdown menu for publisher selection.
- Funding sponsor:** A dropdown menu for funding sponsor selection.
- Status:** A dropdown menu for status selection.
- Buttons:** "Limit to" and "Exclude" buttons at the bottom of the sidebar.
- Search:** A "New search with facets" search bar at the bottom of the sidebar.

The main search results list includes the following entries:

- Ensemble of Convolutional Neural Networks for Face Recognition**  
Mohanraj, V. (Department of Electronics Engineering, Madras Institute of Technology, Anna University, Chennai, India); Sibi Chakkaravarthy, S.; Vaidehi, V. Sources: *Advances in Intelligent Systems and Computing*, v 740, p 467-477, 2019.  
Databases: Compendex  
Document type: Book chapter (CH)  
Detailed Show preview Full text
- Baby cry recognition using deep neural networks**  
Yong, Boon Fei (Faculty of Engineering, Biomedical Engineering Department, University of Malaya, Kuala Lumpur, Malaysia); Ting, Hui Nong; Ng, Kwan Hoong Sources: *IFMBE Proceedings*, v 68, n 3, p 809-813, 2019.  
Databases: Compendex  
Document type: Conference article (CA)  
Detailed Show preview Full text
- Aquarium Family Fish Species Identification System Using Deep Neural Networks**  
Khalifa, Nour Eldeen M. (Information Technology Department, Faculty of Computers and Information, Cairo University, Giza, Egypt); Taha, Mohamed Hamed N.; Hassanien, Aboul Ella Sources: *Advances in Intelligent Systems and Computing*, v 845, p 347-356, 2019, *Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2018*  
Databases: Compendex  
Document type: Conference article (CA)  
Detailed Show preview Full text
- Knowledge-based neural networks for microwave modeling and design**  
Wang, Fang (Carleton University (Canada)) Sources: *ProQuest Dissertations and Theses Global*, 1999  
Databases: Compendex  
Document type: Dissertation (DS)  
Detailed Show preview Full text
- Artificial neural networks applications in wind energy systems: a review**  
Ata, Rasit (Celal Bayar University, Department of Electrical & Electronic Engineering Turkey, Manisa, Turkey) Sources: *Renewable and Sustainable Energy Reviews*, v 49, p 534-562, September 1, 2015  
Databases: Compendex  
Detailed Show preview Cited by in Scopus (89) Full text
- Function approximation by neural networks**  
Li Fengjun (School of Mathematics and Computer Science, Ningxia University, 750021 Yinchuan, China) Sources: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, v 5263 LNCS, n PART 1, p 384-390, 2008, *Advances in Neural Networks - ISNN 2008 - 5th International Symposium on Neural Networks, ISNN 2008, Proceedings*  
Databases: Compendex  
Document type: Conference article (CA)  
Detailed Show preview Cited by in Scopus (2) Full text
- Cambricon-X: An accelerator for sparse neural networks**  
Zhang, Shijin (SKL of Computer Architecture, Institute of Computing Technology, CAS, Beijing, China); Du, Zhong; Zhang, Lei; Lan, Huiying; Liu, Shaoli; Li, Ling; Guo, Qi; Chen, Tianshi; Chen, Yunji Sources: *Proceedings of the Annual International Symposium on Microarchitecture, MICRO, v 2016-December, December 14, 2016, MICRO 2016 - 49th Annual IEEE/ACM International Symposium on Microarchitecture*  
Databases: Compendex  
Document type: Conference article (CA)  
Detailed Show preview Cited by in Scopus (26) Full text
- Optimized linear combination of multiple neural networks on object recognition**  
Jiang, Hualin (Changchun University of Science and Technology, Changchun; 130022, China); Yang, Huamin; Jiang, Zhengang Sources: *Proceedings of SPIE - The International Society for Optical Engineering*, v 4925, p 386-389, August 30, 2002, *Electronic Imaging and Multimedia Technology III*





## EI检索结果

- Refine Results
- Refine 功能的作用

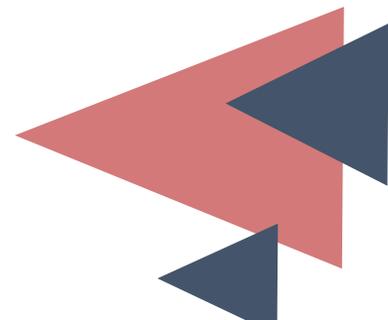
• 可以了解谁在与你研究同一课题，进展如何？

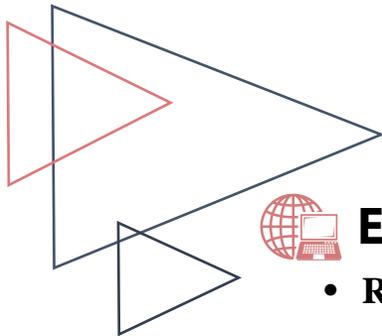
• 了解所关心的课题所涉及的领域，发现新的研究方向

• 通过年代文献量的分析，了解课题所处的生命周期

• 通过出版项分析论文的质量

• 通过文献类型了解论文的分布





## EI检索结果

- Refine Results

### 了解课题生命周期

Year   

<input type="checkbox"/> 2019	(7185)
<input type="checkbox"/> 2018	(38007)
<input type="checkbox"/> 2017	(24671)
<input type="checkbox"/> 2016	(20958)
<input type="checkbox"/> 2015	(17272)

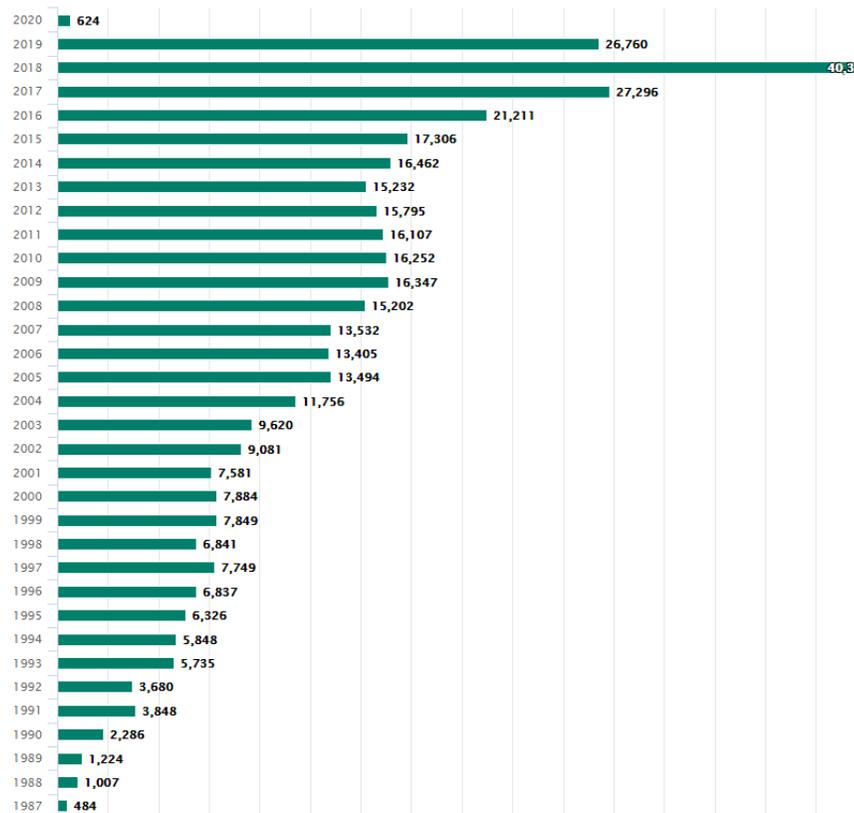


### 查看统计图表

Year  

Search: ((neural network) WN ALL)

Click to limit your results



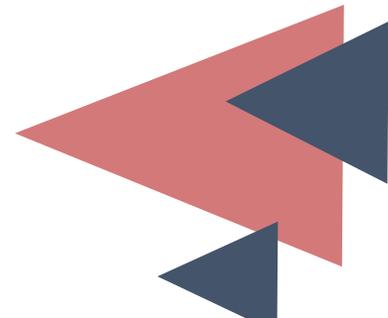
• 形成统计图表及输出数据的按钮会出现在每个检索筛选项旁；

• 使用者可通过图表形式直观浏览检索结果数据，也可以将数据下载输出到其它软件中。

Year  

<input type="checkbox"/> 2019	(7185)	<input type="checkbox"/> 2001	(7582)	<input type="checkbox"/> 1983	(15)
<input type="checkbox"/> 2018	(38007)	<input type="checkbox"/> 2000	(7883)	<input type="checkbox"/> 1982	(7)
<input type="checkbox"/> 2017	(24671)	<input type="checkbox"/> 1999	(7850)	<input type="checkbox"/> 1981	(12)
<input type="checkbox"/> 2016	(20958)	<input type="checkbox"/> 1998	(6808)	<input type="checkbox"/> 1980	(12)
<input type="checkbox"/> 2015	(17272)	<input type="checkbox"/> 1997	(7749)	<input type="checkbox"/> 1979	(10)
<input type="checkbox"/> 2014	(16403)	<input type="checkbox"/> 1996	(6822)	<input type="checkbox"/> 1978	(14)
<input type="checkbox"/> 2013	(15216)	<input type="checkbox"/> 1995	(6167)	<input type="checkbox"/> 1977	(4)
<input type="checkbox"/> 2012	(15789)	<input type="checkbox"/> 1994	(5513)	<input type="checkbox"/> 1976	(3)
<input type="checkbox"/> 2011	(16083)	<input type="checkbox"/> 1993	(5291)	<input type="checkbox"/> 1975	(7)
<input type="checkbox"/> 2010	(16280)	<input type="checkbox"/> 1992	(2995)	<input type="checkbox"/> 1974	(10)
<input type="checkbox"/> 2009	(16343)	<input type="checkbox"/> 1991	(3720)	<input type="checkbox"/> 1973	(5)
<input type="checkbox"/> 2008	(15192)	<input type="checkbox"/> 1990	(2234)	<input type="checkbox"/> 1972	(6)
<input type="checkbox"/> 2007	(13515)	<input type="checkbox"/> 1989	(1212)	<input type="checkbox"/> 1971	(4)
<input type="checkbox"/> 2006	(13288)	<input type="checkbox"/> 1988	(1006)	<input type="checkbox"/> 1969	(2)
<input type="checkbox"/> 2005	(13489)	<input type="checkbox"/> 1987	(484)	<input type="checkbox"/> 1968	(1)
<input type="checkbox"/> 2004	(11685)	<input type="checkbox"/> 1986	(33)	<input type="checkbox"/> 1961	(1)
<input type="checkbox"/> 2003	(9511)	<input type="checkbox"/> 1985	(31)	<input type="checkbox"/> 1955	(2)
<input type="checkbox"/> 2002	(9085)	<input type="checkbox"/> 1984	(15)	<input type="checkbox"/> 1954	(1)

View: 10 Max Limit to Exclude





## EI检索结果

### • Numeric filter

- 在科研文献中，数值数据往往被用来表示最重要的研究内容。然而以往通过数值、物理化学数据来检索科研文献是不太容易的，数值数据往往具有不同的使用范围、书写格式以及一些特殊符号的使用。
- 对于“Quick Search”或是“Expert Search”的检索结果，可以通过Numeric filter对新加入索引的62种不同单位的数值数据进行搜索。
- 重点：搜索具有测量单位的数值数据，克服单位不同与换算带来搜索上的不便。

Refine <<

Numeric filter ?

Select type

Select unit

Operator

0 Continue

- 通过分步引导对数值数据的筛选从而实现数值数据的精确搜索。选择数据的类型、单位、运算符，输入数值即可进行检索。



**Numeric filter** 使用方法可参考以下链接：

[https://service.elsevier.com/app/answers/detail/a\\_id/25923/c/10546/supporthub/engineering-village/](https://service.elsevier.com/app/answers/detail/a_id/25923/c/10546/supporthub/engineering-village/)



## 个性化服务

- 注册及保存历史记录

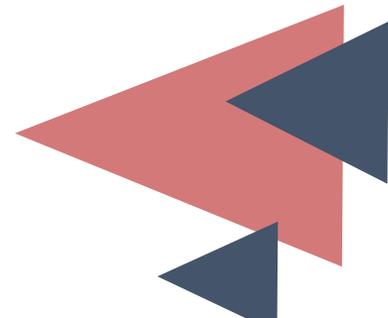
## 创建个人账户

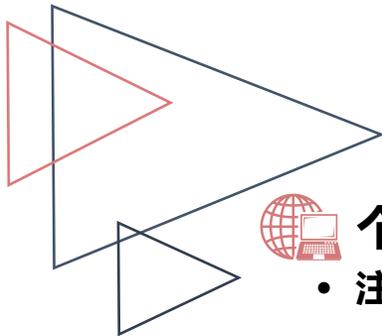
The screenshot shows the Engineering Village registration process. A modal window titled "建立账户" (Create Account) is open over the main website. The modal contains the following fields and text:

- Header: 建立账户 View in English
- Fields: 名字 (拼音) (Name in Pinyin), 姓氏 (拼音) (Surname in Pinyin), 电子邮箱 (Email Address), 密码 (Password).
- Text: 推荐使用Gmail邮箱注册 (Recommended to register with Gmail email).
- Checkbox: 我愿意从Elsevier B.V.及附属公司收到有关其产品和服务的信息。 (I am willing to receive information from Elsevier B.V. and its affiliated companies regarding their products and services.)
- Footer: 建立账户即视为您同意并接受Elsevier注册用户协议 以及 隐私政策。 (Creating an account is considered your agreement and acceptance of the Elsevier user registration agreement and privacy policy.)
- Buttons: 取消 (Cancel), 提交 (Submit).

Annotations on the main website include:

- A red box around the "Create account" button in the top right navigation bar.
- A red box around the "电子邮箱" (Email Address) field in the registration modal.
- A red dashed arrow pointing from the "Create account" button to the registration modal.





## 个性化服务

- 注册及保存历史记录

### • Quick search 检索 “neural networks” 结果

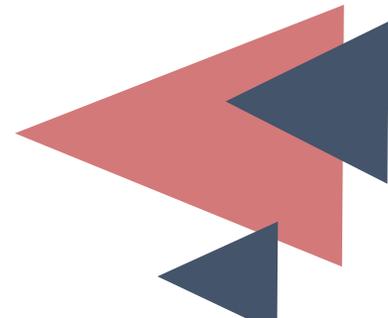
### 查看历史检索结果

### 查看勾选记录

The screenshot displays the Engineering Village search results page for the query "neural networks". The interface includes a search bar with the query, a "Results" dropdown menu (highlighted with a red box and a '1'), and a "Selected records" dropdown menu (highlighted with a red box and a '2'). The search results show 340110 records found in Compendex for 1884-2019. The results are sorted by Relevance. The first three results are:

- Transfer learning in GMDH-type neural networks**  
Abdullahi, Aminu (Department of Computer Science, Federal University Dutse, Dutse, Nigeria); Akter, Mukti Source: *Advances in Intelligent Systems and Computing*, v 833, p 161-169, 2019, Multimedia and Network Information Systems - Proceedings of the 11th International Conference MISSI 2018  
Database: Compendex  
Document type: Conference article (CA)  
Detailed Show preview Full text
- Ensemble of Convolutional Neural Networks for Face Recognition**  
Mohanraj, V. (Department of Electronics Engineering, Madras Institute of Technology, Anna University, Chennai, India); Sibi Chakkaravarthy, S.; Vaidehi, V. Source: *Advances in Intelligent Systems and Computing*, v 740, p 467-477, 2019  
Database: Compendex  
Document type: Book chapter (CH)  
Detailed Show preview Full text
- Baby cry recognition using deep neural networks**  
Yong, Boon Fei (Faculty of Engineering, Biomedical Engineering Department, University of Malaya, Kuala Lumpur, Malaysia); Ting, Hua Nong; Ng, Kwan Hoong Source: *IFMBE Proceedings*, v 68, n 3, p 809-813, 2019  
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## 个性化服务

- 注册及保存历史记录
- Quick search 检索 “neural networks” 结果



## 历史检索结果

Engineering Village

Search ▾ Results ▾ Alerts Selected records More ▾

### Search history

1 searches

Combine searches:

Combine searches	Search query	Actions
#1	345165 results in (Compendex) for: ((neural networks) WN All fields) Details ▾	<input type="checkbox"/> <input type="button" value="Alert"/> <input type="button" value="Save"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>

### Create alert:

定题跟踪服务,如果以关键词neural network的检索结果有更新,则新的动态会发送至用户邮箱

### Save search:

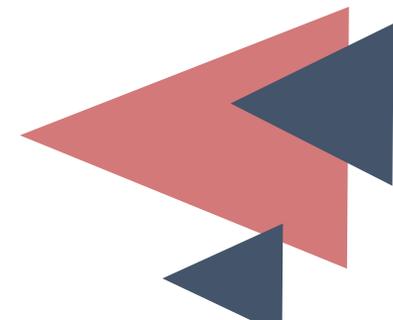
勾选后在本账号下保存检索结果

### Edit this search :

重新编辑此次检索

### Remove search from search history:

从检索历史中删除此次检索记录





## 个性化服务

- 注册及保存历史记录
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### 查看勾选记录



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3 records

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 Li, Lei (School of Space Information, Space Engineering University, Beijing, C  
 Source: *Proceedings - 2018 5th International Conference on Information Science*  
 Database: Compendex

Full text ↗

2. X Adaptive PD Control Based on RBF Neural Network for a Wir  
 Wang, Yuqi (Xiamen University, Xiamen, Fujian; 361005, China); Lin, Qi; Wa  
 Source: *Mathematical Problems in Engineering*, v 2019, 2019  
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3. X Design of fuzzy radial basis function neural network classifier based on information data preprocessing for recycling black plastic wastes: comparative st

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## 个性化服务

- 如何判断期刊是否为EI收录



### Engineering Village Databases

#### About Ei Compendex & Ei Backfile

Ei Compendex is the broadest and most complete engineering literature database available in the world with over 22 million indexed records from 77 countries across 190 engineering disciplines. Every record is carefully selected and indexed using the Engineering Index Thesaurus so engineers can be confident information is relevant, complete, accurate and of high quality.

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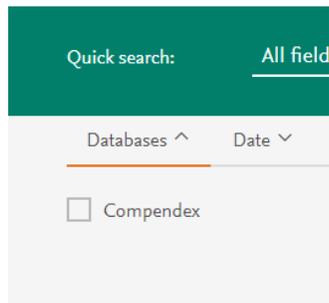
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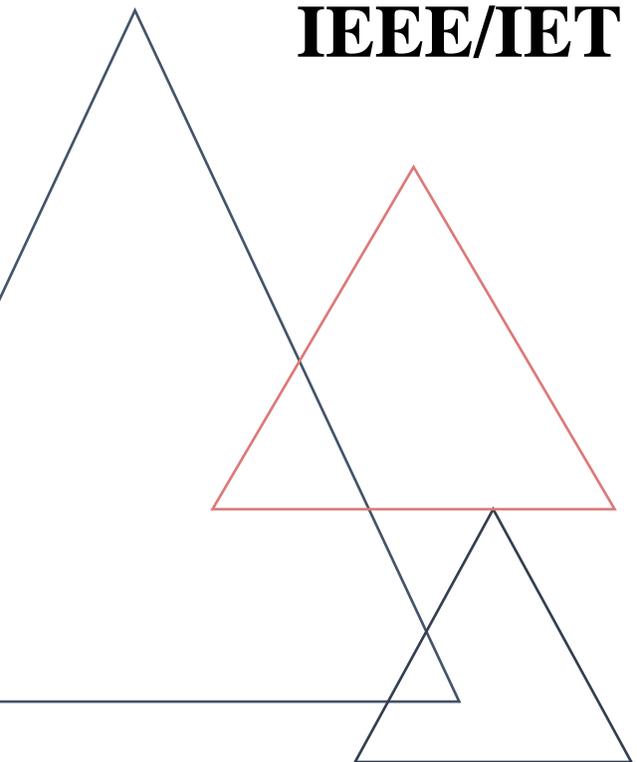
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# PART THREE

**IEEE/IET Electronic Library (IEL)**  
**检索方法**





## IEEE/IET Electronic Library (IEL) 数据库

- IEEE/IET Electronic Library，简称IEL，为IEEE 旗下最完整的在线数字资源。主要包含以下两个机构的出版物：  
IEEE——Institute of Electrical & Electronic Engineers Inc. 美国电气电子工程师学会  
IET——The Institution of Engineering & Technology 国际工程和技术学会（前身为IEE英国电气工程师学会）
- 其内容覆盖了电气电子、航空航天、计算机、通信工程、生物医学工程、机器人自动化、半导体、纳米技术、电力等各种技术领域。

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- |         |           |
|---------|-----------|
| ✓ 航空航天  | ✓ 信息技术    |
| ✓ 汽车工程  | ✓ 医疗设备    |
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| ✓ 电路与系统 | ✓ 石油及天然气  |
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| ✓ 计算机硬件 | ✓ 电力系统    |
| ✓ 计算机软件 | ✓ 机器人与自动化 |
| ✓ 电子学   | ✓ 半导体     |
| ✓ 能源工程  | ✓ 智能电网    |
| ✓ 成像技术  | ✓ 无线通讯    |
| ✓ 工程技术  | .....     |

### IEL数据库

- ✓ 170余种IEEE、20余种IET期刊与杂志，1种BLTJ期刊，总数达400余种（包括过刊及更名刊）；
- ✓ 每年1400余种IEEE会议录和20多种IET会议录，总数超过17000卷；
- ✓ 60多种VDE会议录，超过4500篇；
- ✓ 2600多种IEEE标准；
- ✓ 300多万篇全文文档，提供1988年以后的全文文献，部分历史文献可回溯到1872年；
- ✓ IEEE-Wiley电子书、MIT期刊/电子书、IBM Journal和Morgan & Claypool综述文集等其他资源。



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- |                              |                           |                                 |                  |
|------------------------------|---------------------------|---------------------------------|------------------|
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| • Emerald                    | • PNAS                    | • Taylor & Francis SSH          | • 万方数字化期刊        |
| • Gale Scholar               | • RSC                     | • Web of Science(SCI/SSCI/CPCI) | • 中国共产党思想理论资源数据库 |
| • IEEE/IET ElectronicLibrary | • Science                 | • Wiley                         | • 中国期刊全文数据库(维普)  |
| • InCites/ESI/JCR            | • ScienceDirect(Elsevier) | • CNKI系列全文数据库                   | • 中科院JCR期刊分区表    |



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1936 2019

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D H Mrityunjaya ; Naveen Kumar ; Laxmikant ; Sameer Ali ; H. M. Kelagadi

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聚类分析栏

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- 下方可根据检索需求，按照出版年份、作者及作者所在机构等优化精简检索结果。
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Conferences &gt; 2016 21st Century Energy Need...

## A four stage battery charge controller working on a novel maximum power point tracking based algorithm for solar PV system

Publisher: IEEE

4 Author(s)

Joydip Jana ; Hiranmay Samanta ; Konika Das Bhattacharya ; Hiranmay Saha [View All Authors](#)

671  
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### Abstract

Document Sections

- I. Introduction
  - II. Description of the Developed MPPT Based Charge Controller
  - III. Experimental Result
  - IV. Conclusion
- Authors
  - Figures
  - References
  - Keywords
  - Metrics

### Abstract:

Batteries are used as power storage device in solar photovoltaic (PV) systems. They supply power when there is no solar power generation in the absence of sunlight. Charge controllers are used to charge the batteries safely following the proper charge procedure and an efficient charge controller should have the ability to extract as much power as possible from PV module to charge the batteries. This paper points out the limitation of commonly used maximum power point tracking (MPPT) based battery charge controller used in photovoltaic systems. A newly developed battery charge controller has been developed that retains the good characteristics and resolves the limitations of the commonly used charge controllers. The developed controller is based on a newly developed MPPT technique which enables very fast maximum power point (MPP) catch. This is a four stage controller which brings the battery voltage to full charge in a short time. The experimental result shows that, the new charge controller tracks the MPP faster than the commonly used controllers do. Moreover, the MPPT accuracy of the proposed charge controller is high and the steady state oscillation error around the target MPP is also minimum.

Published in: 2016 21st Century Energy Needs - Materials, Systems and Applications (ICTFCEN)

Date of Conference: 17-19 Nov. 2016

INSPEC Accession Number: 17215474

Date Added to IEEE Xplore: 02 October 2017

DOI: 10.1109/ICTFCEN.2016.8052702

► ISBN Information:

Publisher: IEEE

Conference Location: Kharagpur, India

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Maximum Power Point Tracker (MPPT) for Photovoltaic Power Systems-A Systematic Literature Review  
2018 European Control Conference (ECC)  
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- 一框式检索 ( Global Searching ) : 在任意页面, 顶部检索框内输入关键词或检索式, 进行检索。
- IEEE Xplore平台默认的检索范围是元数据 ( Metadata ), 也可以构建复杂的布尔逻辑检索式来限定检索位置, 例如: "Abstract":robot AND "Publication Title":communications。检索中可自动匹配同一词汇的英式拼写与美式拼写。在平台检索所有项, 不区分大小写, 同时具有词根自动关联功能, 可自动匹配名词的单复数形式, 与动词的不同时态。

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- 命令检索：通过检索式进行检索，运算符为AND/OR/NOT/NEAR/ONEAR，检索项数目在40个以内。
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  - 不能包含空格
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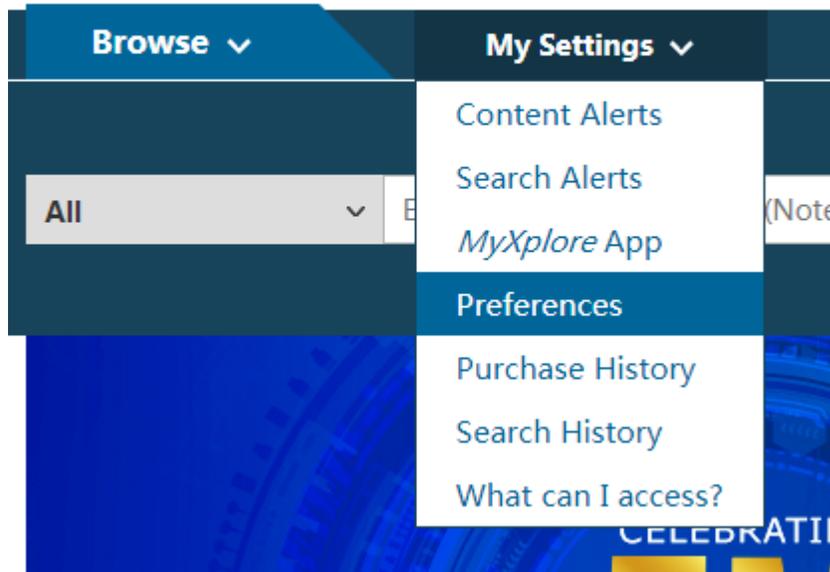
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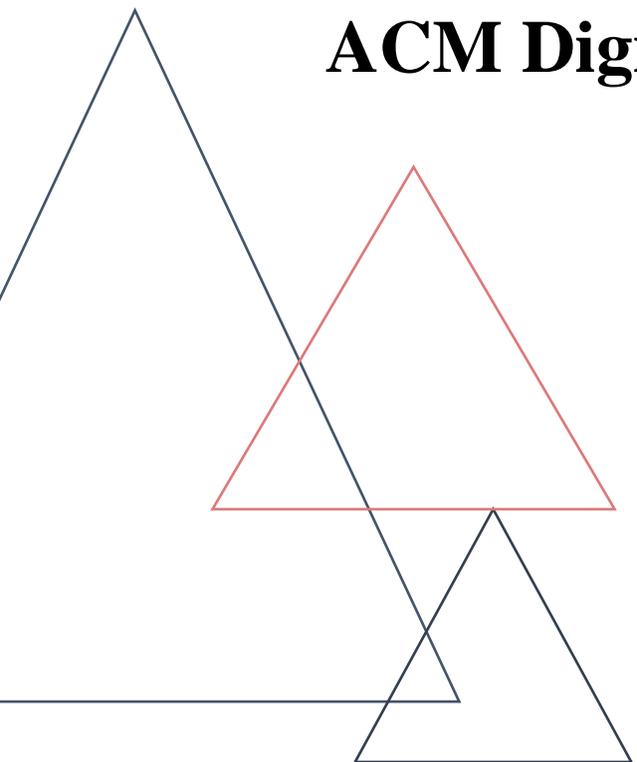
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# PART FORE

**ACM Digital Library 检索方法**





## ACM Digital Library 数据库

- ACM, the Association for Computing Machinery, 美国计算机学会，创立于1947年，是全球历史最悠久和最大的教育科学计算机学会。ACM的成员有来自100多个国家的工业、学术界和政府的10万多位计算机专业人士。
- ACM Digital Library数据库收录了美国计算机协会（Association for Computing Machinery）的各种电子期刊、会议录、快报等文献的全文信息，还可以看到出版物信息。
- 同时该库全面集成了“在线计算机文献指南”（Guide to Computing Literature）文摘数据库。The Guide是来自计算机领域的5,000多家著名出版社的书目资料库，其中绝大多数不是ACM出版物，因此不提供全文，可检索到文摘索引信息。

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- ✓ 近300个会议，4500多卷会议录；
- ✓ 超过47万多篇全文，及“在线计算机文献指南”数据库中270多万条文摘题录信息；
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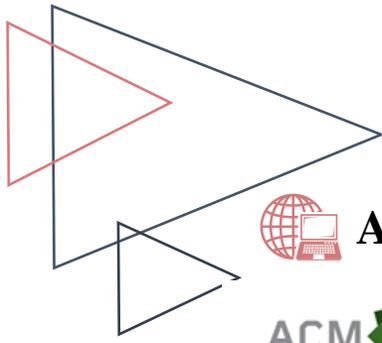
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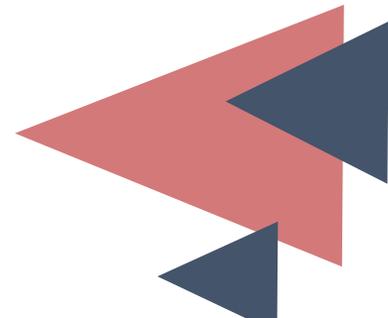
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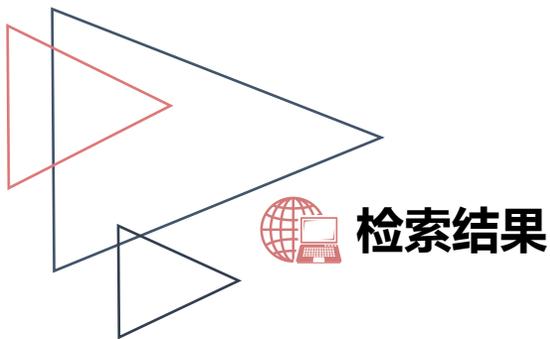
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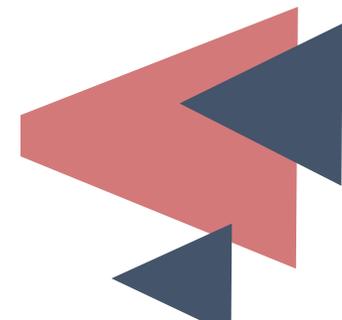
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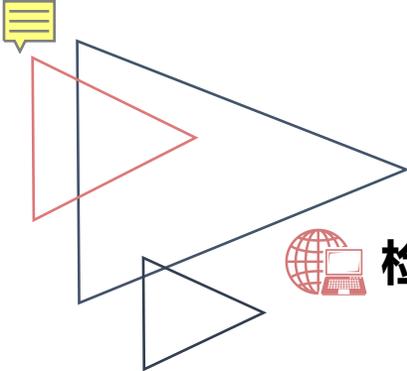
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December 17 - 18, 2019  
London, United Kingdom
- [ICDCN '20](#)  
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- [PEARC '20](#)  
July 13 - 17, 2020  
Portland, OR, USA

- [DARPA Neural Network Study](#)  
[DARPA Neural Network Study\\_\(U.S.\)](#)  
January 1988  
**Bibliometrics:** Citation Count: 28  
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- [1996 IEEE International Conference on Evolutionary Computation \(ICEC\)](#)  
[IEEE Neural Networks Council](#)  
January 1996  
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From the Publisher: This conference presents a new computing technology with powerful applications. Many of the applications in fields like robotics and manufacturing incorporate advances in neural networks and fuzzy logic.  
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- [1996 IEEE International Conference on Evolutionary Computation Proceedings](#)  
[CORPORATE IEEE, Neural Networks Council Staff](#)  
May 1996  
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September 2005  
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January 1999  
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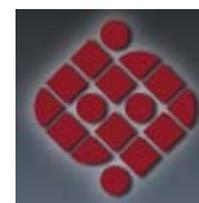


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- 以 “neural network” 为检索词，全文数量最多的出版物（前十）

IEEE/ACM Transactions on Networking (TON)	3489
ACM SIGCOMM Computer Communication Review	2658
ACM SIGMETRICS Performance Evaluation Review	1714
Communications of the ACM	1649
ACM SIGARCH Computer Architecture News	1067
ACM SIGPLAN Notices	681
ACM SIGOPS Operating Systems Review	649
ACM Transactions on Sensor Networks (TOSN)	625
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ACM SIGMOBILE Mobile Computing and Communications Review	529

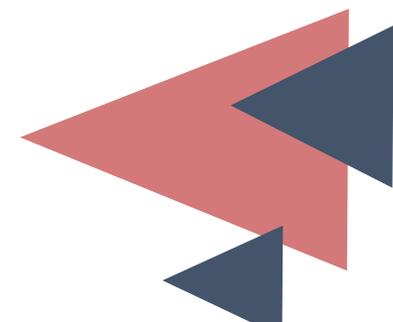
- 根据会议主办方分类结果排序——神经网络方向ACM值得关注的兴趣小组

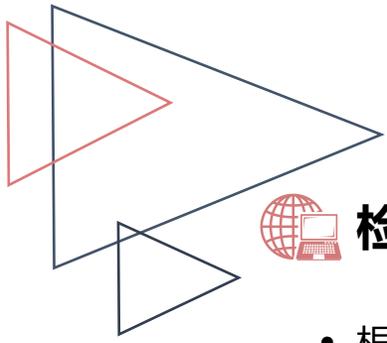


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## 检索结果分析

- 根据会议名称结果排序——神经网络方向值得关注的会议

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SC, The International Conference for High Performance Computing, Networking, Storage, and Analysis

MM, International Multimedia Conference

IWCMC, International Conference on Wireless Communications and Mobile Computing

WWW, International World Wide Web Conference

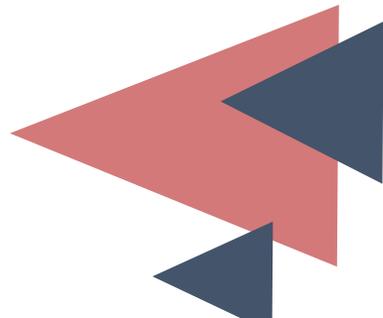
ASONAM, IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining

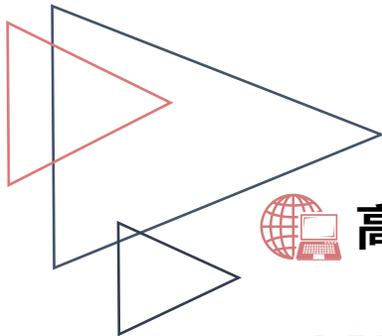
MobiCom, International Conference on Mobile Computing and Networking

KDD, ACM SIGKDD International Conference on Knowledge Discovery & Data Mining

CIKM, ACM International Conference on Information and Knowledge Management

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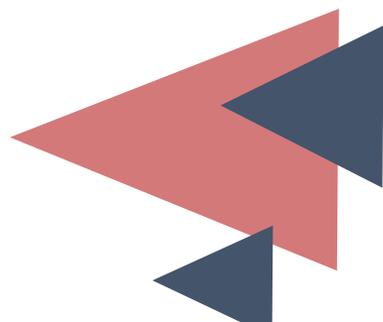
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Full Text:  PDF

Authors: [Zhuyun Dai](#) [Carnegie Mellon University, Pittsburgh, PA, USA](#)  
[Jamie Callan](#) [Carnegie Mellon University, Pittsburgh, PA, USA](#)



2019 Article

Published in:



· Proceeding  
SIGIR'19 Proceedings of the 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval  
Pages 985-988

Paris, France — July 21 - 25, 2019  
ACM New York, NY, USA ©2019  
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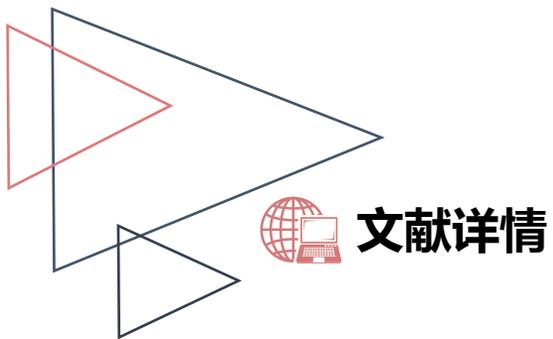
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Identifying which terms are important with respect to a specific query or document is crucial to Information Retrieval, but context is difficult to capture with traditional term frequency signals. This paper proposes a Deep Contextualized Term Weighting framework (DeepCT) that identifies important terms by taking into consideration the meaning of the term and the role it plays in a specific context. The DeepCT framework is built upon the neural contextualized text representations of BERT[3]. It learns to map the contextualized word representations onto the target term weights in a supervised manner. In DeepCT, a specific term's weight may vary in different textual contexts, reflecting its relations to other words. The contextualized term weights from DeepCT are beneficial to both document and query understanding. On the document side, we propose DeepCT-Index, which uses DeepCT to estimate the importance of each document term, and then uses those estimations to generate term weights that are stored in the index. On the query side, we propose DeepCT-Query, which estimates the importance of each query term and use the weights to generate new query representations. Both the new index and the new query can be used directly by bag-of-words retrieval models such as BM25 and QL, making these methods efficient and easy to incorporate into existing search systems. Experiments demonstrate that DeepCT can greatly improve retrieval accuracy by providing a deeper understanding of a term's importance in a specific document/query context.



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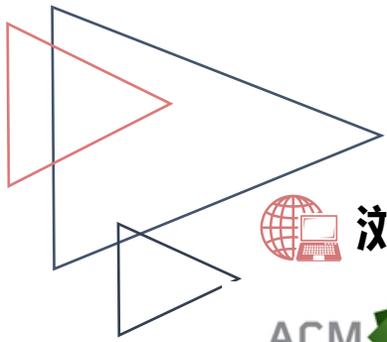
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 Ruizhe Cai, **Ao Ren**, Olivia Chen, Ning Liu, Caiwen Ding, Xuehai Qian, Jie Han, Wenhui Luo, Nobuyuki Yoshikawa, Yanzhi Wang  
 June 2019 ISCA '19: Proceedings of the 46th International Symposium on Computer Architecture  
**Publisher:** ACM  
**Bibliometrics:**  
 Citation Count: 0  
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 The Adiabatic Quantum-Flux-Parametron (AQFP) superconducting technology has been recently developed, which achieves the highest energy efficiency among superconducting logic families, potentially 10<sup>4</sup>-10<sup>5</sup> gain compared with state-of-the-art CMOS. In 2016, the successful fabrication and testing of AQFP-based circuits with the scale of 83,000 JJs have demonstrated the scalability ...  
**Keywords:** adiabatic quantum-flux-parametron, deep learning, stochastic computing, superconducting

**2** [A Majority Logic Synthesis Framework for Adiabatic Quantum-Flux-Parametron Superconducting Circuits](#)  
 Ruizhe Cai, Olivia Chen, **Ao Ren**, Ning Liu, Caiwen Ding, Nobuyuki Yoshikawa, Yanzhi Wang  
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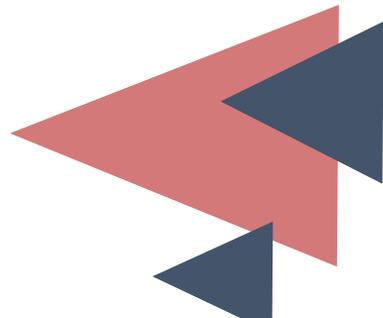
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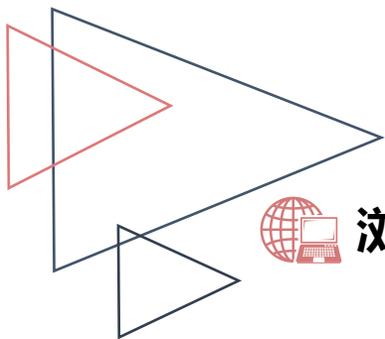
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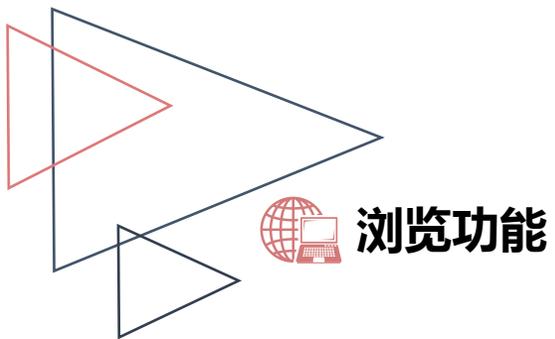
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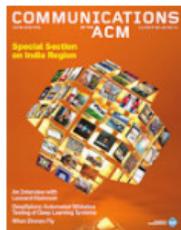
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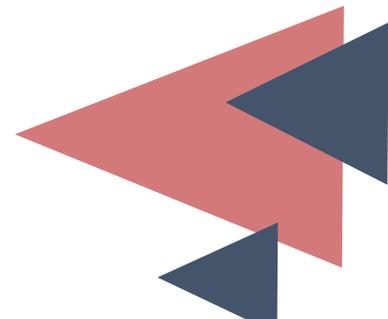
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