



ICT 기술 연구 트렌드

International Conference를 중심으로

20132605 안상준

20155186 김현지

연구 트렌드 목차



▶ 서론

연구 배경

데이터 소스 사이트

▶ 본론

작업 흐름도

데이터 사이트 구조 및 노드

데이터 처리 결과

시각화

▶ 결론

결과 해석

Q&A



서론

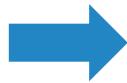
연구 배경에 대하여
데이터 소스 사이트

▶ 연구 배경

주제를 선정하게 된 배경



최근 NN, CV, ML과 같은
ICT 기술 관심도 증가



다양한 Conference의
논문을 수집해보자!

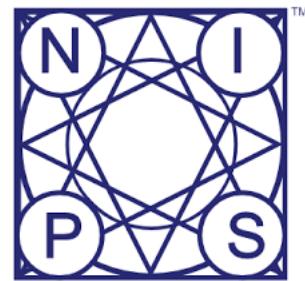
데이터 소스

주제와 관련된 데이터 소스 추출 사이트



CVPR Conference

Computer Vision
Pattern Recognition



NIPS Conference

Neural Information
Processing Systems



ICML Conference

International Conference on
Machine Learning

분석 과정

데이터 수집부터 데이터 분석까지

작업 흐름도

전반적인 데이터 분석 흐름도

Html 문서로 되어 있는
각 사이트 별 DOM 트리
계층 구조로 파싱

HTML Parsing



URL

각 사이트 별 URL을
URL 변수에 저장 후,
getURL 함수 이용해
사이트 URL 저장



Extract Node

DOM 트리 구조로 파싱 후,
목표 데이터 노드 위치를
파악하여 노드 추출



Scraping



Word Frequency 기반
다양한 시각화

Visualization



Download Paper

각 사이트 별 URL을
이용해 PDF 파일로
논문 파일 저장 및 이용

web_scraping(working_directory, name, number)

웹 스크레이핑 통합 함수생성 (작업 공간, 컨퍼런스 명, 논문 개수)



web_scraping(working_directory, name, number)

웹 스크레이핑 통합 함수생성 (작업 공간, 컨퍼런스 명, 논문 개수)

[CVPR]

CVPR_Paper_Contents : 논문 내용

CVPR_Paper_Name : 논문 명

CVPR_Writer : 논문 저자

CVPR_Word_Before : 논문 내용 단어 (불용어 제거 전)

CVPR_Word_After : 논문 내용 단어 (불용어 제거 후)

데이터 추출 및 저장

Paper Name

[NIPS]

NIPS_Paper_Contents : 논문 내용

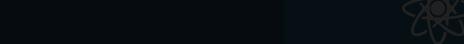
NIPS_Paper_Name : 녺문 명



NIPS_Writer : 논문 저자

NIPS_Word_Before : 논문 내용 단어 (불용어 제거 전)

NIPS_Word_After : 논문 내용 단어 (불용어 제거 후)



Writer

논문 작성자에 해당되는

노드로 접근하여

[ICML]

ICML_Paper_Contents : 논문 내용

ICML_Paper_Name : 녺문 명

ICML_Writer : 녺문 저자

ICML_Word_Before : 논문 내용 단어 (불용어 제거 전)

ICML_Word_After : 논문 내용 단어 (불용어 제거 후)

데이터 추출 및 저장

불용어 사전 (in tm package)

> stopwords()

[1]	"i"	"me"	"my"	"myself"	"we"	"our"	"ours"	"ourselves"	"you"
[10]	"your"	"yours"	"yourself"	"yourselves"	"he"	"him"	"his"	"himself"	"she"
[19]	"her"	"hers"	"herself"	"it"	"its"	"itself"	"they"	"them"	"their"
[28]	"theirs"	"themselves"	"what"	"which"	"who"	"whom"	"this"	"that"	"these"
[37]	"those"	"am"	"is"	"are"	"was"	"were"	"be"	"been"	"being"
[46]	"have"	"has"	"had"	"having"	"do"	"does"	"did"	"doing"	"would"
[55]	"should"	"could"	"ought"	"i'm"	"you're"	"he's"	"she's"	"it's"	"we're"
[64]	"they're"	"i've"	"you've"	"we've"	"they've"	"i'd"	"you'd"	"he'd"	"she'd"
[73]	"we'd"	"they'd"	"i'll"	"you'll"	"he'll"	"she'll"	"we'll"	"they'll"	"isn't"
[82]	"aren't"	"wasn't"	"weren't"	"hasn't"	"haven't"	"hadn't"	"doesn't"	"don't"	"didn't"
[91]	"won't"	"wouldn't"	"shan't"	"shouldn't"	"can't"	"cannot"	"couldn't"	"mustn't"	"let's"
[100]	"that's"	"who's"	"what's"	"here's"	"there's"	"when's"	"where's"	"why's"	"how's"
[109]	"a"	"an"	"the"	"and"	"but"	"if"	"or"	"because"	"as"
[118]	"until"	"while"	"of"	"at"	"by"	"for"	"with"	"about"	"against"
[127]	"between"	"into"	"through"	"during"	"before"	"after"	"above"	"below"	"to"
[136]	"from"	"up"	"down"	"in"	"out"	"on"	"off"	"over"	"under"
[145]	"again"	"further"	"then"	"once"	"here"	"there"	"when"	"where"	"why"
[154]	"how"	"all"	"any"	"both"	"each"	"few"	"more"	"most"	"other"
[163]	"some"	"such"	"no"	"nor"	"not"	"only"	"own"	"same"	"so"
[172]	"than"	"too"	"very"						

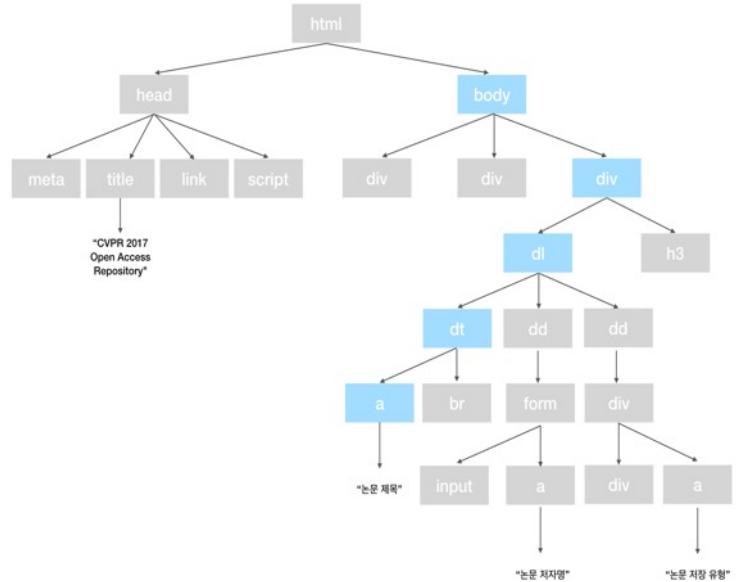
▶ 데이터 구조

CVPR(Computer Vision Pattern Recognition)



The screenshot shows the homepage of the CVPR 2017 open access website. At the top, there's a search bar with placeholder text "Search or enter website name". Below it is a logo for "CVPR 2017" and "CvF". To the right, it says "Powered by: Microsoft Azure" and "Sponsored by: amazon, facebook, Google". The main content area is titled "CVPR 2017 open access". It includes a note about open access versions provided by the Computer Vision Foundation, a statement about copyright, and a "Search" button. Below this, there's a section titled "Papers" with several paper entries:

- Graph-Structured Representations for Visual Question Answering**
Damien Teney, Liqiang Liu, Anton van den Hengel
[pdf] [supp] [arXiv] [poster] [video] [bibtex]
- Physics Inspired Optimization on Semantic Transfer Features: An Alternative Method for Room Layout Estimation**
Hao Zou, Ying Li, Aibing Tan, Fuhua Guo, Yutong Chen, Li Zhang
[pdf] [supp] [arXiv] [poster] [bibtex]
- Local Binary Convolutional Neural Networks**
Felix Jader-Ala, Vimalan Narayanan Boddu, Marios Savvides
[pdf] [arXiv] [poster] [video] [bibtex]
- Designing Effective Inter-Pixel Information Flow for Natural Image Matting**
Tugiz Aksoy, Tunc Ozan Aydin, Marc Pollefeys
[pdf] [arXiv] [video] [bibtes]
- Face Normals "In-The-Wild" Using Fully Convolutional Networks**



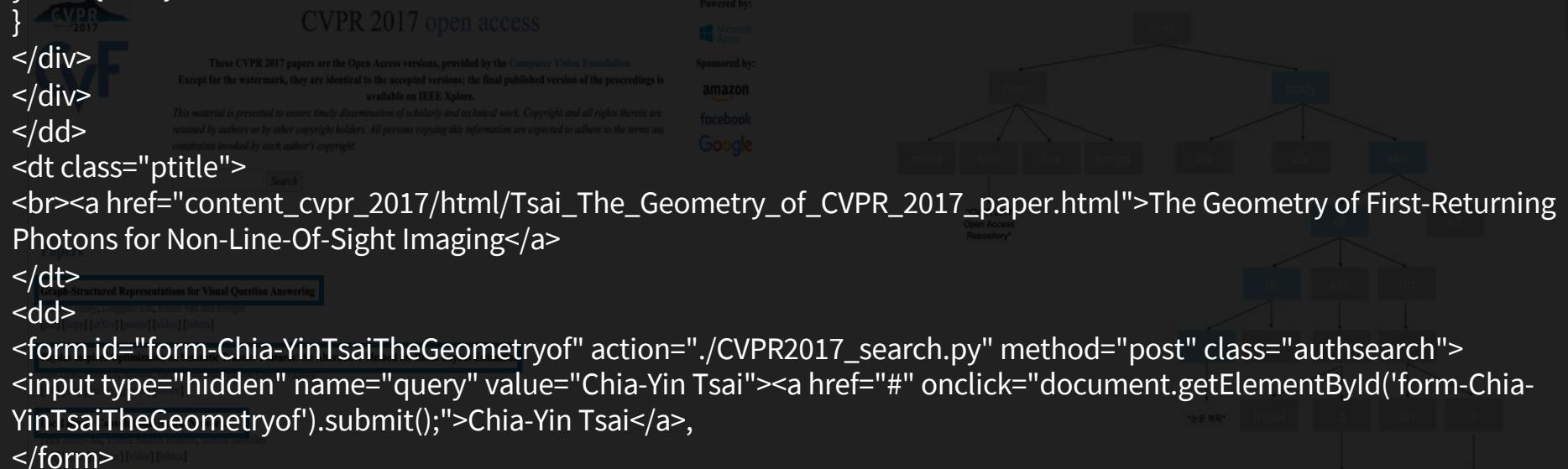
```
url <- "http://openaccess.thecvf.com/CVPR2017.py"
html <- getURL(url)
html.parsed <- htmlParse(html)

# Paper Name
CVPR_Paper_Name <- xpathSApply(doc = html.parsed, path = " //dt/a", fun = xmlValue)
CVPR_Paper_Name <- gsub(pattern = "[[:punct:]]", replacement = "", CVPR_Paper_Name)
save(CVPR_Paper_Name, file = "CVPR_Paper_Name.RData")
```

```

<div class="link2"><a class="fakelink" onclick="$(this).siblings('.bibref').slideToggle()">bibtex</a>
<div class="bibref">
@InProceedings{Ramanishka_2017_CVPR,<br>
author = {Ramanishka, Vasili and Das, Abir and Zhang, Jianming and Saenko, Kate},<br>
title = {Top-Down Visual Saliency Guided by Captions},<br>
booktitle = {The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)},<br>
month = {July},<br>
year = {2017}<br>
}

```



```

url <- "http://openaccess.thecvf.com/CVPR2017.py"
html <- getURL(url)
html.parsed <- htmlParse(html)

```

추출 및 처리 결과

- [1] "Graph Structured Representations for Visual Question Answering"
- [2] "Physics Inspired Optimization on Semantic Transfer Features: An Alternative Method for Room Layout Estimation"
- [3] "Local Binary Convolutional Neural Networks"
- [4] "Designing Effective Inter Pixel Information Flow for Natural Image Matting"
- [5] "Face Normals In The Wild Using Fully Convolutional Networks"
- [6] "3D Face Morphable Models In The Wild"

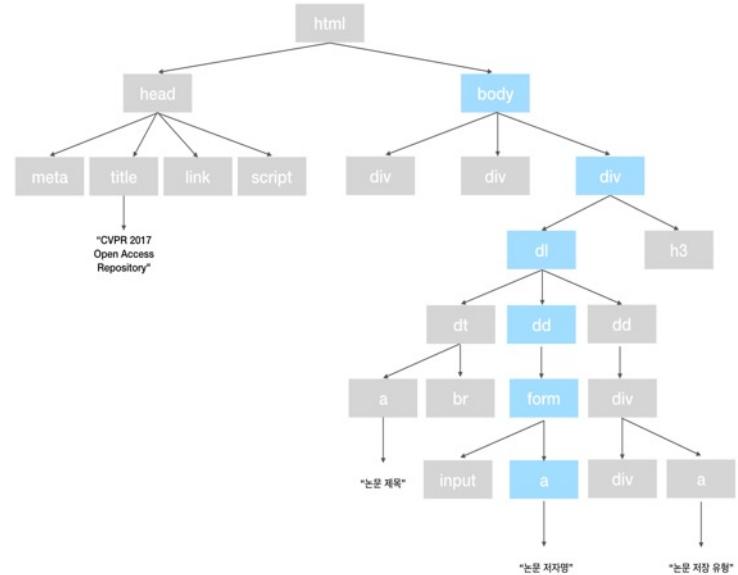
▶ 데이터 구조

CVPR(Computer Vision Pattern Recognition)



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[pdf] [supp] [arXiv] [poster] [video] [bibtex]
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[pdf] [supp] [arXiv] [poster] [video] [bibtex]
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[pdf] [arXiv] [poster] [video] [bibtex]
- Designing Effective Inter-Pixel Information Flow for Natural Image Matting**
Yagiz Aksoy, Tunc Ozan Aydin, Marc Pollefeys
[pdf] [arXiv] [video] [bibtex]
- Face Normals "In-The-Wild" Using Fully Convolutional Networks**

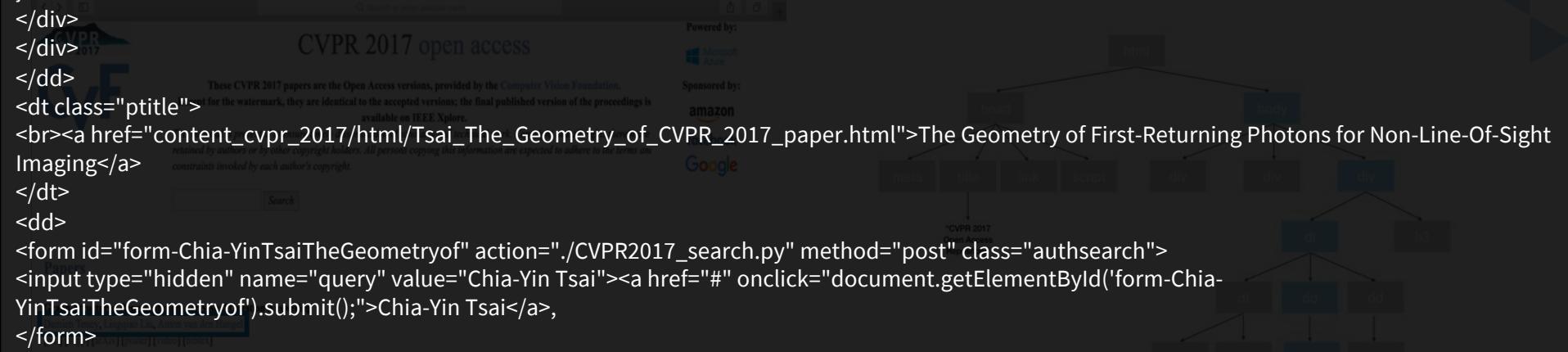


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<div class="bibref">
@InProceedings{Ramanishka_2017_CVPR,<br>
author = {Ramanishka, Vasili and Das, Abir and Zhang, Jianming and Saenko, Kate},<br>
title = {Top-Down Visual Saliency Guided by Captions},<br>
booktitle = {The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)},<br>
month = {July},<br>
year = {2017}<br>
}

```



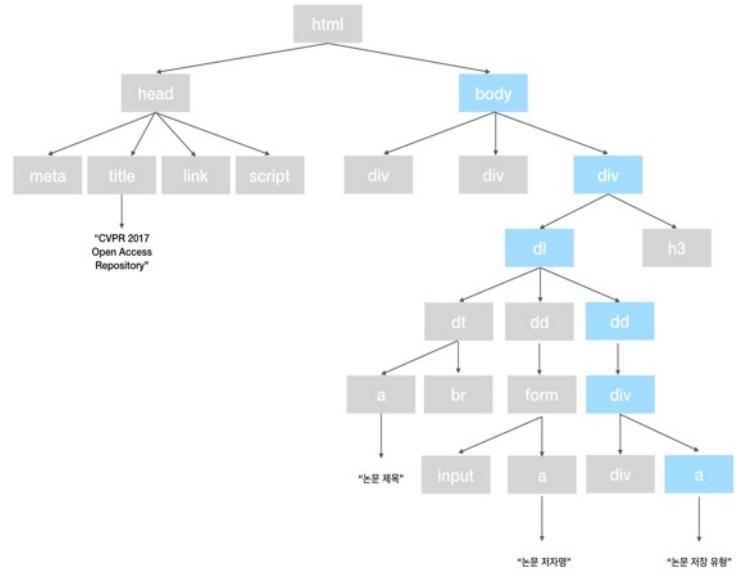
▶ 데이터 구조

CVPR(Computer Vision Pattern Recognition)



The screenshot shows the homepage of the CVPR 2017 open access website. It features a search bar at the top, followed by the text "Powered by: Microsoft Azure". Below that, it says "Sponsored by: amazon, facebook, Google". The main content area displays a list of papers:

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[pdf] [supp] [arXiv] [poster] [video] [bibtex]
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Felix Juefei-Xu, Vishnu Naresh Boddeti, Marios Savvides
[pdf] [arXiv] [poster] [video] [bibtex]
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Yuniz Aksoy, Tunc Ozan Aydin, Marc Pollefeys
[pdf] [arXiv] [video] [bibtes]
- Face Normals "In-The-Wild" Using Fully Convolutional Networks**



```
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```

데이터 구조

```
<div class="link2">[<a class="fakelink" onclick="$(this).siblings('.bibref').slideToggle()">bibtex</a>]
```

```
<div class="bibref">
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```
@InProceedings{Ramanishka_2017_CVPR,<br>}
```

```
author = {Ramanishka, Vasili and Das, Abir and Zhang, Jianming and Saenko, Kate},<br>
```

```
title = {Top-Down Visual Saliency Guided by Captions},<br>
```

```
booktitle = {The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)},<br>
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```
year = {2017}<br>
```

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}
```

```
</div>
```

```
</div>
```

```
</dd>
```

```
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```

```
<br><a href="content_cvpr_2017/html/Tsai_The_Geometry_of_CVPR_2017_paper.html">The Geometry of First-Returning Photons for Non-Line-Of-Sight Imaging</a>
```

```
</dt>
```

```
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```

```
Graph-Structured Representations for Visual Question Answering
```

```
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```

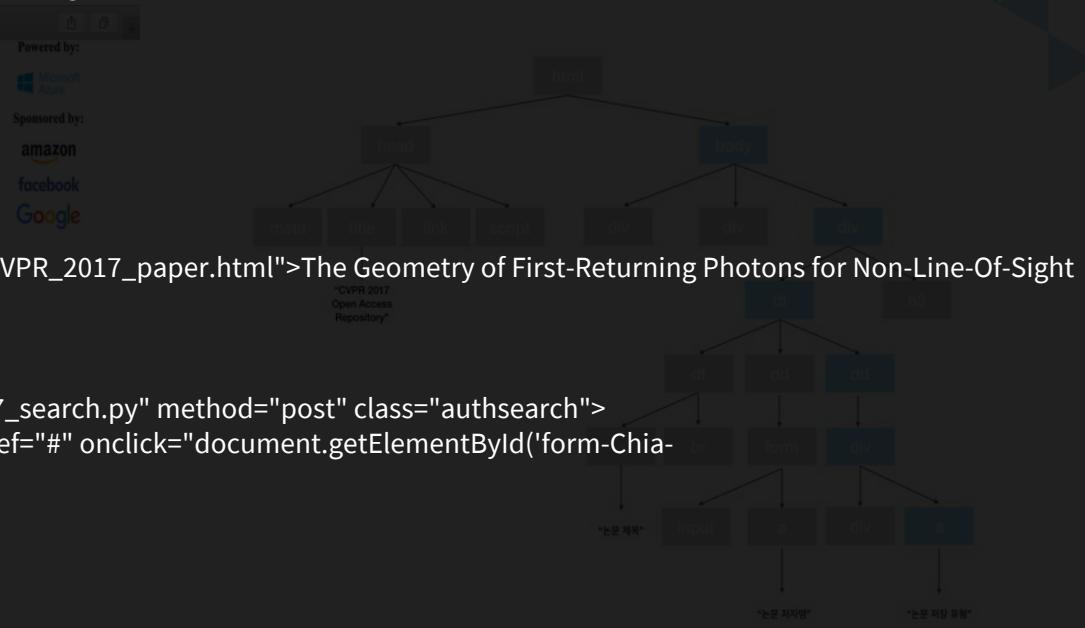
```
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```

```
YinTsaiTheGeometryof').submit();">Chia-Yin Tsai</a>,
```

```
</form>
```

These CVPR 2017 papers are the Open Access versions, provided by the Computer Vision Foundation.
Except for the watermark, they are identical to the accepted versions; the final published version of the proceedings is available on IEEE Xplore.

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추출 및 처리 결과

Graph-Structured Representations for Natural Image Matting

Yuefei Xu, Jitendra Malik, Marc Pollefeys

[1] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Xu_Graph-Structured_Representations_for_CVPR_2017_paper.pdf"

[2] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Zhao_Physics_Inspired_Optimization_CVPR_2017_paper.pdf"

[3] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Juefei-Xu_Local_Binary_Convolutional_CVPR_2017_paper.pdf"

[4] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Aksoy_Designing_Effective_Inter-Pixel_CVPR_2017_paper.pdf"

[5] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Trigeorgis_Face_Normals_In-The-Wild_CVPR_2017_paper.pdf"

[6] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Booth_3D_Face_Morphable_CVPR_2017_paper.pdf"

[7] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Adhikarla_Towards_a_Quality_CVPR_2017_paper.pdf"

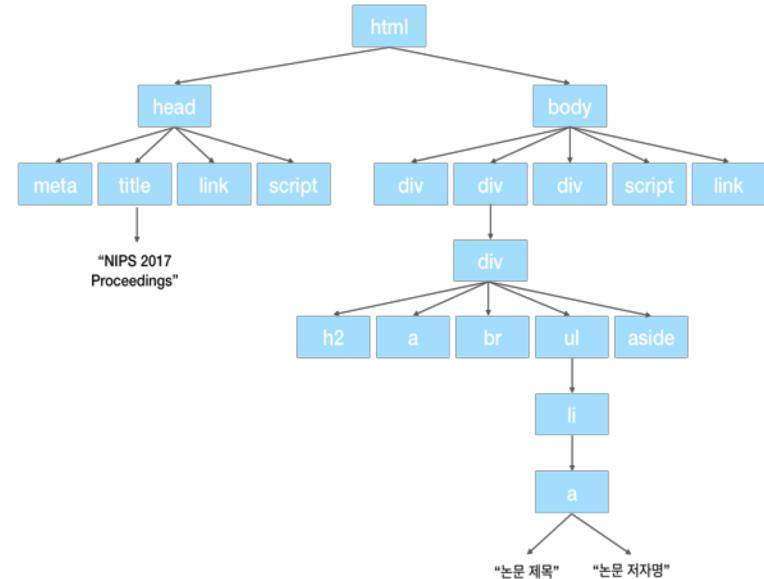
[8] "http://openaccess.thecvf.com/content_cvpr_2017/papers/Kotaru_Position_Tracking_for_CVPR_2017_paper.pdf"

▶ 데이터 구조

NIPS(Neural Information Precessing System.)

The screenshot shows the homepage of the NIPS Proceedings website at papers.nips.cc. The header includes the title "NIPS Proceedings³", a "Books" link, and a search bar. Below the header, it says "Advances in Neural Information Processing Systems 30 (NIPS 2017)". It states that the papers are from the conference "Neural Information Processing Systems 2017". A list of 15 research papers is provided, each with a title and authors. The titles are highlighted with red boxes.

- Wider and Deeper, Cheaper and Faster: Tensorized LSTMs for Sequence Learning (Zhen He, Shaobing Gao, Liang Xiao, Daxue Liu, Hangen He, David Barber)
- Concentration of Multilinear Functions of the Ising Model with Applications to Network Data (Constantinos Daskalakis, Nishanth Dikkala, Gautam Kamath)
- Deep Subspace Clustering Networks (Yan Ji, Tong Zhang, Hongdong Li, Mathieu Salzmann, Ian Reid)
- Attentional Pooling for Action Recognition (Rohit Girdhar, Deva Ramanan)
- On the Consistency of Quick Shift (Heinrich Jiang)
- Breaking the Nonsmooth Barrier: A Scalable Parallel Method for Composite Optimization (Fabian Pedregosa, Rémi Leblond, Simon Lacoste-Julien)
- Dual-Agent GANs for Photorealistic and Identity Preserving Profile Face Synthesis (Yan Zhao, Lin Xiong, Panasonic Karlekar Jayashree, Jianshu Li, Fang Zhao, Zhecan Wang, Panasonic Sugir Pranata, Panasonic Shengmei Shen, Shuicheng Yan, Jia Shi Feng)
- Dilated Recurrent Neural Network (Shiyu Chang, Yang Zhang, Wei Han, Mo Yu, Xiaoxiao Guo, Wei Tan, Xiaodong Cui, Michael Witbrock, Mark A. Hasegawa-Johnson, Thomas S. Huang)
- Hunt For The Unique, Stable, Sparse And Fast Feature Learning On Graphs (Saurabh Verma, Zhi-Li Zhang)
- Scalable Generalized Linear Bandits: Online Computation and Hashing (Kwang-Sung Jun, Aniruddha Bhargava, Robert Nowak, Rebecca Willett)
- Probabilistic Models for Integration Error in the Assessment of Functional Cardiac Models (Chris Oates, Steven Niederer, Angela Lee, François-Xavier Briol, Mark Girolami)



```
url <- "http://papers.nips.cc/book/advances-in-neural-information-processing-systems-30-2017"
html <- getURL(url)
html.parsed <- htmlParse(html)

# Paper Name
NIPS_Paper_Name <- xpathSApply(doc = html.parsed, path = "//div/ul/li/a[1]", fun = xmlValue)
NIPS_Paper_Name <- gsub(pattern = "[[:punct:]]", replacement = " ", NIPS_Paper_Name)
save(NIPS_Paper_Name, file = "NIPS_Paper_Name.RData")
```

Robust Optimization for Non-Convex Objectives
Robert S. Chen, Brendan Lucier, Yaron Singer, Vasilis Syrgkanis

Thy Friend is My Friend: Iterative Collaborative Filtering for Sparse Matrix Estimation Christian Borgs, Jennifer Chayes, Christina E. Lee, Devavrat Shah

Wallach and R. Fergus and S. Vishwanathan and R. Garnett.

They are proceedings from the conference, "Neural information Processing Systems 2017."

Adaptive Classification for Prediction Under a Budget Feng Nan, Venkatesh Saligrama

Pedregosa, Rémi Leblond, Simon Lacoste-Julien

Dual-Agent GANs for Photorealistic and Identity Preserving Profile Face Synthesis

Jian Zhao, Lin Xiong, Panasonic Karlekar Jayashree,

Jianhu Li, Fang Zhao, Zhecan Wang, Panasonic Sughr Pranata, Panasonic Shengmei Shen, Shuicheng Yan, Jiashi Feng

Dilated Recurrent Neural Networks

Shiyu Chang, Yang Zhang, Wei Han, Mo Yu, Xiaoxiao Guo, Wei Tan, Xiaodong Cui, Michael Witbrock,

Mark A. Hasegawa-Johnson, Thomas S. Huang

Hunt For The Unique: Stable, Sparse And Fast Feature Learning On Graphs

Saurabh Verma, Zhi-Li Zhang

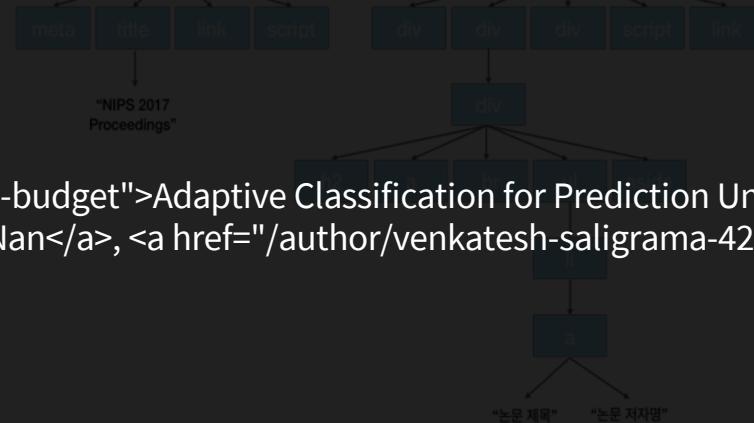
Scalable Generalized Linear Bandits: Online Computation and Hashing

Kwang-Sung Jun, Aniruddha Bhargava, Robert Nowak, Rebecca

추출 및 처리 결과

François-Xavier Briol, Mark Girolami

- [1] "Wider and Deeper Cheaper and Faster Tensorized LSTMs for Sequence Learning"
- [2] "Concentration of Multilinear Functions of the Ising Model with Applications to Network Data"
- [3] "Deep Subspace Clustering Networks"
- [4] "Attentional Pooling for Action Recognition"
- [5] "On the Consistency of Quick Shift"
- [6] "Breaking the Nonsmooth Barrier A Scalable Parallel Method for Composite Optimization"

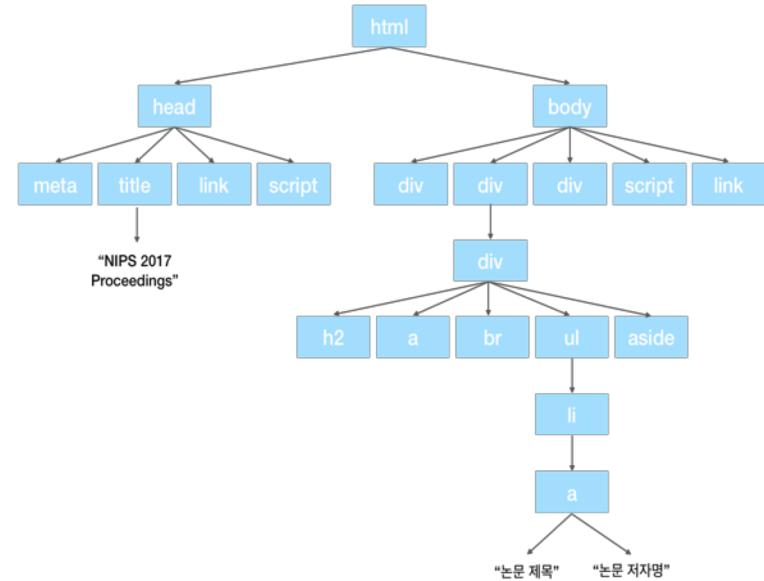


▶ 데이터 구조

NIPS(Neural Information Precessing System.)

The screenshot shows the homepage of the NIPS Proceedings website at papers.nips.cc. The header includes the title "NIPS Proceedings³", a "Books" link, and a search bar. Below the header, the text "Advances in Neural Information Processing Systems 30 (NIPS 2017)" is displayed. A note states that the papers are from the conference "Neural Information Processing Systems 2017". A list of 20 research papers is shown, each with a title, authors, and a small thumbnail image. Several paper titles and author names are highlighted with red boxes.

- Wider and Deeper, Cheaper and Faster: Tensorized LSTMs for Sequence Learning [Zhen He, Shaobing Gao, Liang Xiao, Daxue Liu, Hancong He, David Barber]
- Concentration of Multilinear Functions of the Ising Model with Applications to Network Data [Constantinos Daskalakis, Nishanth Dikkala, Gautam Kamath]
- Deep Subspace Clustering Networks [Pan Ji, Tong Zhang, Hongdong Li, Mathieu Salzmann, Ian Reid]
- Attentional Pooling for Action Recognition [Rohit Girdhar, Deva Ramanan]
- On the Consistency of QuickSISI [Heinrich Jiang]
- Breaking the Nonsmooth Barrier: A Scalable Parallel Method for Composite Optimization [Fabian Pedregosa, Rémi Leblond, Simon Lacoste-Julien]
- Dual-Agent GANs for Photorealistic and Identity Preserving Profile Face Synthesis [Jian Zhao, Lin Xiong, Panasonic Karlekar Jayashree, Jianshu Li, Fang Zhao, Zhecan Wang, Panasonic Sugirji Pranata, Panasonic Shengmei Shen, Shuicheng Yan, Jiashi Feng]
- Dilated Recurrent Neural Network [Shiwei Chen, Yang Zhang, Wei Han, Mo Yu, Xiaoyan Guo, Wei Tan, Xiaodong Cui, Michael Witbrock, Mark A. Hasegawa-Johnson, Thomas S. Huang]
- Hunt For The Unique, Stable, Sparse And Fast Feature Learning On Graph [Saurabh Verma, Zhi-Li Zhang]
- Scalable Generalized Linear Bandits: Online Computation and Hashing [Kwang-Sung Jun, Aniruddha Bhargava, Robert Nowak, Rebecca Willett]
- Probabilistic Models for Integration Error in the Assessment of Functional Cardiac Models [Chris Oates, Steven Niederer, Angela Lee, François-Xavier Briot, Mark Girolami]



```
NIPS_Writer <- xpathSApply(doc = html.parsed, path = "//div/ul/li", fun = xmlValue)
NIPS_Writer <- substr(x = NIPS_Writer, start = nchar(NIPS_Paper_Name) + 2, stop = nchar(NIPS_Writer))
NIPS_Writer <- strsplit(x = NIPS_Writer, split = ", ")
save(NIPS_Writer, file = "NIPS_Writer.RData")
```

Robust Optimization for Non-Convex Objectives Robert S. Chen, Brendan Lucier, Yaron Singer, Vasilis Syrgkanis

NIPS(Neural Information Precessing System.)

Thy Friend is My Friend: Iterative Collaborative Filtering for Sparse Matrix Estimation Christian Borgs, Jennifer Chayes, Christina E. Lee, Devavrat Shah

NIPS Proceedings

Books

search

Adaptive Classification for Prediction Under a Budget Feng Nan, Venkatesh Saligrama

Wallach and R. Fergus and S. Vishwanathan and R. Garnett.

They are proceedings from the conference, "Neural information Processing Systems 2017."

- Wider and Deeper, Cheaper and Faster: Tokenized LSTMs for Sequence Learning Zhen He, Shaobing Gao, Liang Xiao, Daxue Liu
Hengen He, David Barber

추출 및 처리 결과

- Multilinear Functions of the Ising Model with Applications to Network Data Constantinos Daskalakis, Nishanth Dikkala
Gautam Kamath

- Deep Subspace Clustering Networks Pan Ji, Tong Zhang, Hongdong Li, Mathieu Salzmann, Ian Reid

- Attentional Pooling for Action Recognition Rohit Girdhar, Deva Ramanan

- On the Consistency of QuickSIS Heinrich Jiang

[1] "Zhen He" "Shaobing Gao" "Liang Xiao" "Daxue Liu" "Hangen He" "David Barber"

[2]

[1] "Constantinos Daskalakis" "Nishanth Dikkala" "Gautam Kamath"

[3]

[1] "Pan Ji" "Tong Zhang" "Hongdong Li" "Mathieu Salzmann" "Ian Reid"

[4]

[1] "Rohit Girdhar" "Deva Ramanan"

[5]

[1] "Heinrich Jiang"

[6]

[1] "Fabian Pedregosa" "Rémi Leblond" NIP "Simon Lacoste-Julien" ly(doc = html.parsed, path = "//div/ul/li", fun = xmlValue)

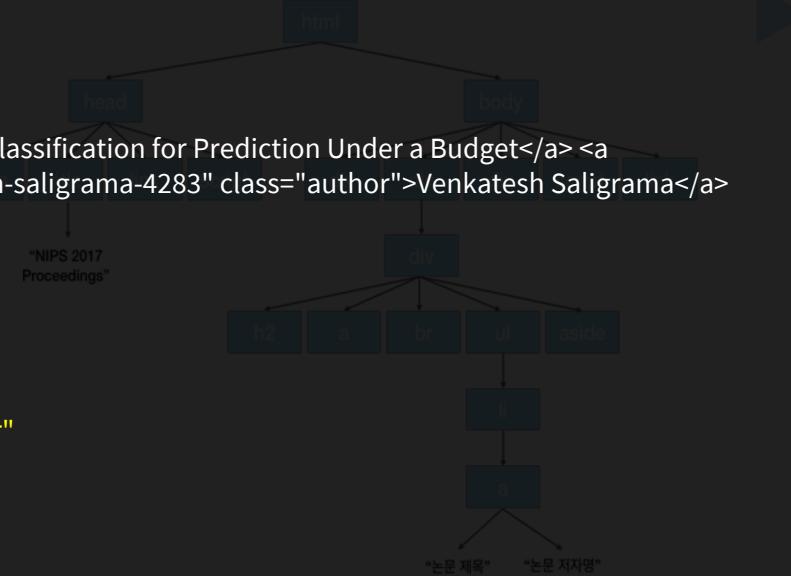
[7] NIPS_Writer <- substr(x = NIPS_Writer, start = nchar(NIPS_Paper_Name) + 2, stop = nchar(NIPS_Writer))

[1] "Jian Zhao" "Lin Xiong" NIP "Panasonic Kärlekar Jayashree" writer, split = ",")

[4] "Jianshu Li" "Fang Zhao" save(NIPS_Writer, file = "NIPS_Writer.RData")

[7] "Panasonic Sugiri Pranata" "Panasonic Shengmei Shen" "Shuicheng Yan"

[10] "Jiashi Feng"

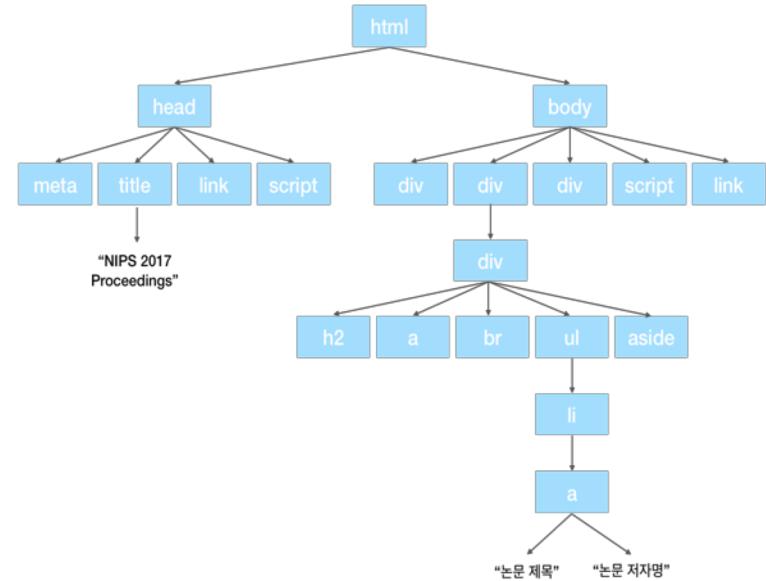


▶ 데이터 구조

NIPS(Neural Information Precessing System.)

The screenshot shows a web browser displaying the NIPS Proceedings website at papers.nips.cc. The page title is "NIPS Proceedings". A search bar is present at the top right. Below the title, it says "Advances in Neural Information Processing Systems 30 (NIPS 2017)". It states that the papers are edited by I. Guyon and U.V. Luxburg and S. Bengio and H. Wallach and R. Fergus and S. Vishwanathan and R. Garnett. The text indicates they are proceedings from the conference "Neural Information Processing Systems 2017". A list of 15 research papers is shown, each with a title, authors, and a brief description. Several paper titles are highlighted with red boxes.

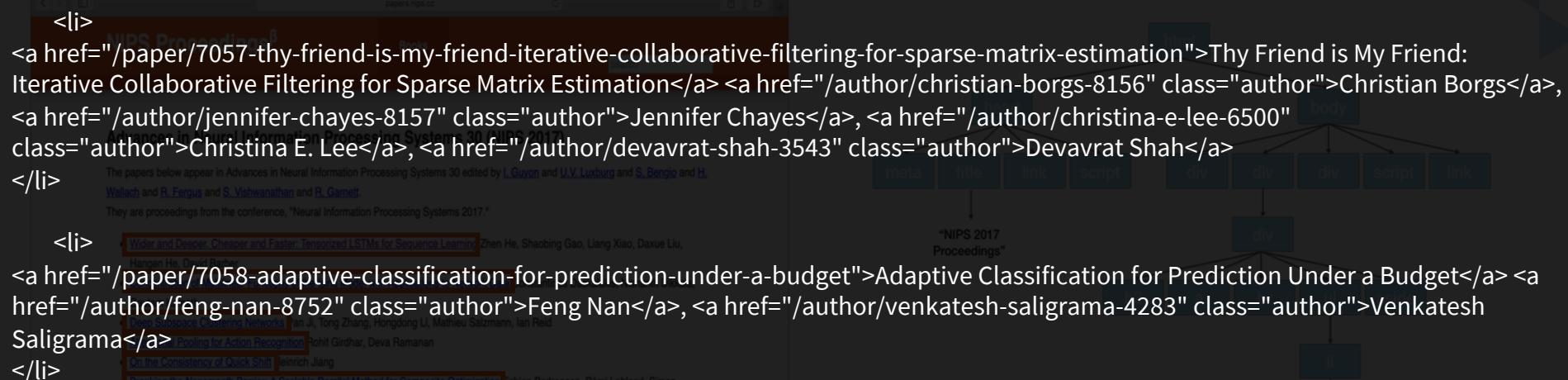
- Wider and Deeper, Cheaper and Faster: Tensorized LSTMs for Sequence Learning
- Concentration of Multilinear Functions of the Ising Model with Applications to Network Data
- Deep Subspace Clustering Networks
- Attentional Pooling for Action Recognition
- On the Consistency of Quick Shift
- Breaking the Nonsmooth Barrier: A Scalable Parallel Method for Composite Optimization
- Dual-Agent GANs for Photorealistic and Identity Preserving Profile Face Synthesis
- Dilated Recurrent Neural Network
- Hunt For The Unique, Stable, Sparse And Fast Feature Learning On Graphs
- Scalable Generalized Linear Bandits: Online Computation and Hashing
- Probabilistic Models for Integration Error in the Assessment of Functional Cardiac Models



```
NIPS_Paper <- xpathSApply(doc = html.parsed, path = "//div/ul/li/a[1]", fun = xmlAttrs, "href")
NIPS_URL <- paste0("http://papers.nips.cc/", NIPS_Paper, ".pdf")
```

▶ 텐서플로우 구조

Robust Optimization for Non-Convex Objectives Robert S. Chen, Brendan Lucier, Yaron Singer, Vasilis Syrgkanis



Thy Friend is My Friend: Iterative Collaborative Filtering for Sparse Matrix Estimation Christian Borgs, Jennifer Chayes, Christina E. Lee, Devavrat Shah

The papers below appear in *Advances in Neural Information Processing Systems 30* edited by [J. Guyon](#) and [U.V. Luxburg](#) and [S. Bengio](#) and [H. Wallach](#) and [R. Garnett](#).

They are proceedings from the conference, "Neural information Processing Systems 2017."

 Wider and Deeper, Cheaper and Faster: Tensorized LSTMs for Sequence Learning Zhen He, Shaobing Gao, Liang Xiao, Daxue Liu, Hancong He, Dafang Wang
 Pooling for Action Recognition Rohit Girdhar, Deva Ramanan
 On the Consistency of Quick Shift Einrich Jiang
 Breaking the Nonsmooth Barrier: A Scalable Parallel Method for Composite Optimization Fabian Pedregosa, Rémi Leblond, Simon Lacoste-Julien
 Dual-Agent GANs for Photorealistic and Identity Preserving Profile Face Synthesis Jian Zhao, Lin Xiong, Panasonic Karlekar Jayashree, Jianhu Li, Fang Zhao, Zhecan Wang, Panasonic Sugata Pranata, Panasonic Shengmei Shen, Shuicheng Yan, Jiashi Feng
 Dilated Recurrent Neural Networks Shiyu Chang, Yang Zhang, Wei Han, Mo Yu, Xiaoxiao Guo, Wei Tan, Xiaodong Cui, Michael Witbrock, Ming Tang, Michael Johnson, Thomas S. Huang
 Stable, Sparse And Fast Feature Learning On Graphs Saurabh Verma, Zhi-Li Zhang
 Scalable Generalized Linear Bandits: Online Computation and Hashing Kwang-Sung Jun, Aniruddha Bhargava, Robert Nowak, Rebecca Willett

추출 및 처리 결과

- [1] "http://papers.nips.cc//paper/6606-wider-and-deeper-cheaper-and-faster-tensorized-lstms-for-sequence-learning.pdf"
- [2] "http://papers.nips.cc//paper/6607-concentration-of-multilinear-functions-of-the-ising-model-with-applications-to-network-data.pdf"
- [3] "http://papers.nips.cc//paper/6608-deep-subspace-clustering-networks.pdf"
- [4] "http://papers.nips.cc//paper/6609-attentional-pooling-for-action-recognition.pdf"
- [5] "http://papers.nips.cc//paper/6610-on-the-consistency-of-quick-shift.pdf"
- [6] "http://papers.nips.cc//paper/6611-breaking-the-nonsmooth-barrier-a-scalable-parallel-method-for-composite-optimization.pdf"
- [7] "http://papers.nips.cc//paper/6612-dual-agent-gans-for-photorealistic-and-identity-preserving-profile-face-synthesis.pdf"

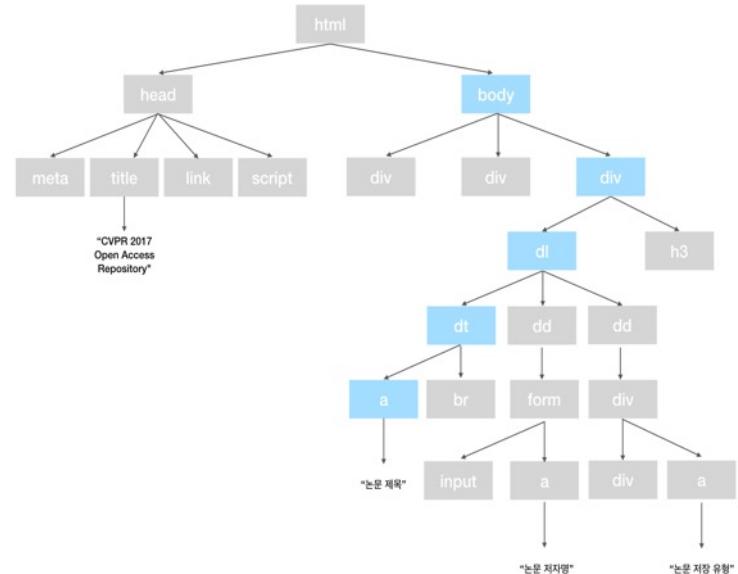
▶ 데이터 구조

ICML(Internasional Conference on Machine Learning)



The screenshot shows a web browser window for 'proceedings.mlr.press'. The title bar says 'PMLR Proceedings of Machine Learning Research'. The page header includes 'Volume 70' and 'All Volumes', 'JMLR', 'MLOSS', 'FAQ', 'Submission Format', and a red 'ISSN' button. Below the header, it says 'Volume 70: International Conference on Machine Learning, 6-11 August 2017, International Convention Centre, Sydney, Australia'. There is a link '[edit]'. The main content area lists several research papers:

- Editors:** Doina Precup, Yee Whye Teh
- [bib][cleproc]**
- Filter Authors:** Filter Titles:
- Uncovering Causality from Multivariate Hawkes Integrated Cumulants**
Massil Achab, Emmanuel Bacry, Stéphane Gaiffas, Iacopo Mastromatteo, Jean-François Muzy; PMLR 70:1-10
[abs] [Download PDF] [Supplementary PDF]
- A Unified Maximum Likelihood Approach for Estimating Symmetric Properties of Discrete Distributions**
Jayadev Acharya, Hirakendu Das, Alon Orlitsky, Ananda Theertha Suresh; PMLR 70:11-21
[abs] [Download PDF] [Supplementary PDF]
- Constrained Policy Optimization**
Joshua Achiam, David Held, Aviv Tamar, Pieter Abbeel; PMLR 70:22-31
[abs] [Download PDF] [Supplementary PDF]
- The Price of Differential Privacy for Online Learning**
Naman Agarwal, Karan Singh; PMLR 70:32-40
[abs] [Download PDF] [Supplementary PDF]
- Local Bayesian Optimization of Motor Skills**
Riad Akrour, Dmitry Sorokin, Jan Peters, Gerhard Neumann; PMLR 70:41-50
[abs] [Download PDF]
- Connected Subgraph Detection with Mirror Descent on SDPs**
Cem Aksöyler, Lorenzo Orecchia, Venkatesh Saligrama; PMLR 70:51-59



```
ICML_Paper_Name <- xpathSApply(doc = html.parsed, path = "//div/div/div/p[1]", fun = xmlValue)
ICML_Paper_Name <- ICML_Paper_Name[-1]
ICML_Paper_Name <- gsub(pattern = "[[:punct:]]", replacement = " ", ICML_Paper_Name)
save(ICML_Paper_Name, file = "ICML_Paper_Name.RData")
```

```

<div class="paper">
<p class="title">Improved Variational Autoencoders for Text Modeling using Dilated Convolutions</p>
<p class="details">
<span class="authors">

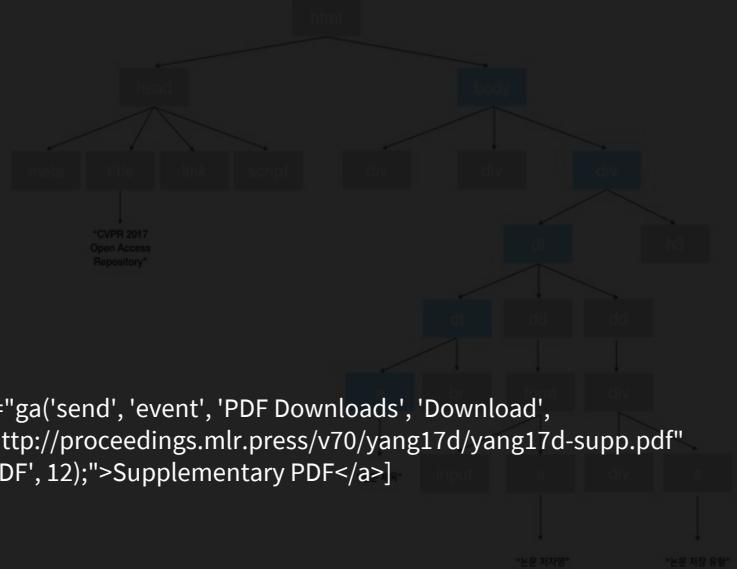
```

ICML(Internasional Conference on Machine Learning)

Zichao Yang,

Zhiteng Hu,

The screenshot shows the PMLR website for Volume 70 of the International Conference on Machine Learning (ICML). The page header includes the PMLR logo and the title "Proceedings of Machine Learning Research". Below the header, there are navigation links for "Volume 70", "All Volumes", "JMLR", "MLOSS", "FAQ", and "Submission Format". The main content area displays the conference details: "Volume 70: International Conference on Machine Learning, 6-11 August 2017, International Convention Centre, Sydney, Australia". It lists the editors: "Doina Precup, Yee Whye Teh" and "Massimiliano Ponti, Emmanuelle Morin, Sébastien Gourdeau, Sébastien Rasmatteo, Jean-François Muzy". The page also features a search bar with "Filter Authors:" and "Filter Titles:" fields, and several download links for PDFs and supplementary materials.



추출 및 처리 결과

- [1] "Uncovering Causality from Multivariate Hawkes Integrated Cumulants"
- [2] "A Unified Maximum Likelihood Approach for Estimating Symmetric Properties of Discrete Distributions"

```
arsed, path = "//div/div/div/p[1]", fun = xmlValue)
```
- [3] "Constrained Policy Optimization"

```
ICML_Paper_Name <- ICML_Paper_Name[-1]
```
- [4] "The Price of Differential Privacy for Online Learning"

```
ICML_Paper_Name <- gsub(pattern = "[[:punct:]]", replacement = " ", ICML_Paper_Name)
```
- [5] "Local Bayesian Optimization of Motor Skills"

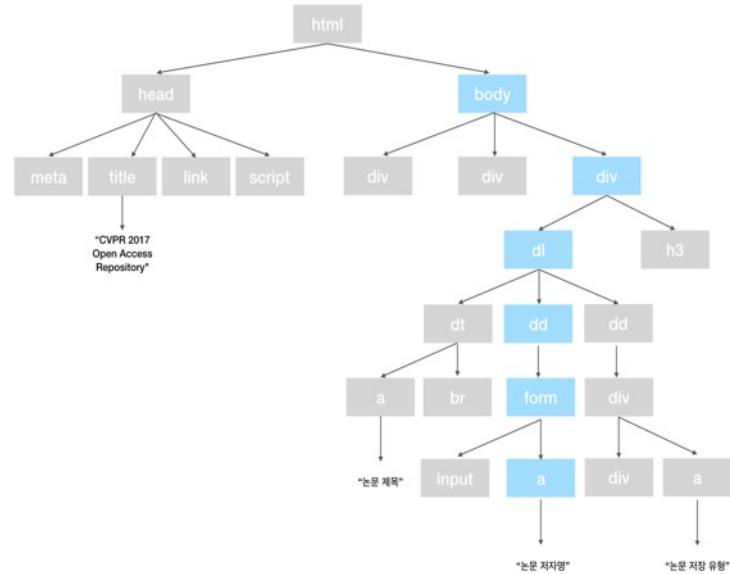
```
save(ICML_Paper_Name, file = "ICML_Paper_Name.RData")
```
- [6] "Connected Subgraph Detection with Mirror Descent on SDPs"
- [7] "Learning from Clinical Judgments Semi Markov Modulated Marked Hawkes Processes for Risk Prognosis"
- [8] "A Semismooth Newton Method for Fast Generic Convex Programming"

▶ 데이터 구조

ICML(Internasional Conference on Machine Learning)



The screenshot shows a web browser displaying the PMLR website. The page title is "Proceedings of Machine Learning Research". The header includes links for "Volume 70", "All Volumes", "JMLR", "MLOSS", "FAQ", "Submission Format", and "RSS". Below the header, it says "Volume 70: International Conference on Machine Learning, 6-11 August 2017, International Convention Centre, Sydney, Australia". There is a link "[edit]" next to the editors' names. A search bar for "Filter Authors:" and a dropdown menu for "Filter Titles:" are also visible. The main content lists several research papers with their titles, authors, and download links (PDF and Supplementary PDF). The titles include "Uncovering Causality from Multivariate Hawkes Integrated Cumulants", "A Unified Maximum Likelihood Approach for Estimating Symmetric Properties of Discrete Distributions", "Constrained Policy Optimization", "The Price of Differential Privacy for Online Learning", "Local Bayesian Optimization of Motor Skills", and "Connected Subgraph Detection with Mirror Descent on SDPs". Each paper entry has a blue-bordered box around its details.



```
ICML_Writer <- xpathSApply(doc = html.parsed, path = "/div/div/div/p/span[1]", fun = xmlValue)
ICML_Writer <- gsub(pattern = "Wn", replacement = "", x = ICML_Writer)
ICML_Writer <- gsub(pattern = " ", replacement = "", x = ICML_Writer)
ICML_Writer <- strsplit(x = ICML_Writer, split = ",      ")
save(ICML_Writer, file = "ICML_Writer.RData")
```

```
[1] "http://proceedings.mlr.press/v70/achab17a/achab17a.pdf"
[2] "_blank"
[3] "ga('send', 'event', 'PDF Downloads', 'Download', http://proceedings.mlr.press/v70/achab17a/achab17a.pdf, 10);"
[4] "http://proceedings.mlr.press/v70/acharya17a/acharya17a.pdf"
[5] "_blank"
[6] "ga('send', 'event', 'PDF Downloads', 'Download', http://proceedings.mlr.press/v70/acharya17a/acharya17a.pdf, 10);"
[7] "http://proceedings.mlr.press/v70/achiam17a/achiam17a.pdf"
[8] "_blank"
[9] "ga('send', 'event', 'PDF Downloads', 'Download', http://proceedings.mlr.press/v70/achiam17a/achiam17a.pdf, 10);"
[10] "http://proceedings.mlr.press/v70/agarwal17a/agarwal17a.pdf"
[11] "_blank"
[12] "ga('send', 'event', 'PDF Downloads', 'Download', http://proceedings.mlr.press/v70/agarwal17a/agarwal17a.pdf, 10);"
[13] "http://proceedings.mlr.press/v70/akrour17a/akrour17a.pdf"
[14] "_blank"
[15] "ga('send', 'event', 'PDF Downloads', 'Download', http://proceedings.mlr.press/v70/akrour17a/akrour17a.pdf, 10);"
[16] "http://proceedings.mlr.press/v70/aksoylar17a/aksoylar17a.pdf"
```



추출 및 처리 결과

```
[1] "http://proceedings.mlr.press/v70/achab17a/achab17a.pdf"
[2] "http://proceedings.mlr.press/v70/acharya17a/acharya17a.pdf"
[3] "http://proceedings.mlr.press/v70/achiam17a/achiam17a.pdf"
[4] "http://proceedings.mlr.press/v70/agarwal17a/agarwal17a.pdf"
[5] "http://proceedings.mlr.press/v70/akrour17a/akrour17a.pdf"
[6] "http://proceedings.mlr.press/v70/aksoylar17a/aksoylar17a.pdf"
[7] "http://proceedings.mlr.press/v70/alaa17a/alaa17a.pdf"
[8] "http://proceedings.mlr.press/v70/ali17a/ali17a.pdf"
[9] "http://proceedings.mlr.press/v70/allamanis17a/allamanis17a.pdf"
[10] "http://proceedings.mlr.press/v70/allamanis17a/allamanis17a.pdf" <- xpathsApply(doc = html.parsed, path = "/div/div/div/p/span[1]", fun = xmlValue)
[11] "http://proceedings.mlr.press/v70/allamanis17a/allamanis17a.pdf" <- gsub(pattern = "Wn", replacement = "", x = ICML_Writer)
[12] "http://proceedings.mlr.press/v70/allamanis17a/allamanis17a.pdf" <- gsub(pattern = " ", replacement = "", x = ICML_Writer)
[13] "http://proceedings.mlr.press/v70/allamanis17a/allamanis17a.pdf" <- ICML_Writer, split = ", ")
[14] save(ICML_Writer, file = "ICML_Writer.RData")
```

데이터 시각화

- 논문 제목의 단어에 대한 빈도수 및 WordCloud

```
Name_Frequency <- function(x){
  data <- gsub(pattern = "[[:digit:]]", replacement = "", x = x)
  data <- gsub(pattern = "[[:punct:]]", replacement = "", x = data)
  data <- tolower(data)
  for (i in (1:length(data)))){
    temp = paste(data[i], data[i + 1])
    data[i+1] = temp}
  if(!require("tm")) install.packages("tm"); library(tm)
  corpus <- VCorpus(VectorSource(temp)) # Corpus in memory
  result <- tm_map(corpus, removeWords, stopwords(kind = "en")) # remove stopwords [type = "English"]
  result <- as.character(result[[1]])
  return(result)
}
```

- [[**:digit:**]] 정규 표현식을 이용하여 숫자 제거
- [[**:punct:**]] 정규 표현식을 이용하여 문장부호 제거
- Tolower를 이용하여 소문자 통일
- For 반복문을 이용하여, 여러 개의 논문 제목을 1개의 벡터로 표현
- Tm (Text Mining) 패키지를 이용하여 영여 불용어 제거
- 결과값 반환

스크레이핑 한 제목들에 대해 공통으로 처리하기 위해

Name_Frequency 함수 구현

데이터 시각화

- 논문 제목의 단어에 대한 빈도수 및 WordCloud

CVPR

```
result <- Name_Frequency(CVPR_Paper_Name)
sort(table(strsplit(x = result, split = " ")), decreasing = TRUE)[1:20]
if(!require("wordcloud2")) install.packages("wordcloud2"); library(wordcloud2)
letterCloud(table(strsplit(x = result, split = " ")), word = "CVPR", size = 20, color = 'random-light', backgroundColor = 'White')
```



””	1198	Detection	54
Learning	141	Object	52
Deep	126	Visual	51
Networks	102	Segmentation	47
Image	92	semantic	47
D	70	Convolutional	46
Network	66	Via	42
Neural	57	Video	39
Recognition	57	Estimation	34
Using	56	Action	32

데이터 시작화

- 논문 제목의 단어에 대한 빈도수 및 WordCloud

NIPS

```
result <- Name_Frequency(NIPS_Paper_Name)
```

```
sort(table(strsplit(x = result, split = " ")), decreasing = TRUE)[1:20]
```

```
letterCloud(table(strsplit(x = result, split = " ")), word = "NIPS", size = 20, color = 'random-light', backgroundColor = 'White')
```



'''	978	gradient	26
learning	179	model	26
networks	67	adversarial	25
neural	64	inference	25
deep	61	stochastic	25
models	41	algorithms	24
via	32	reinforcement	24
data	31	using	24
optimization	29	variational	22
online	27	analysis	21

데이터 시각화

- 논문 제목의 단어에 대한 빈도수 및 WordCloud

ICML

```
result <- Name_Frequency(ICML_Paper_Name)
sort(table(strsplit(x = result, split = " ")), decreasing = TRUE)[1:20]
letterCloud(table(strsplit(x = result, split = " ")), word = "ICML", size = 20, color = 'random-light', backgroundColor = 'White')
```



""	627	via	19
learning	106	bayesian	18
networks	52	online	18
deep	40	data	17
neural	40	efficient	15
models	35	clustering	14
optimization	29	distributed	13
stochastic	23	estimation	13
gradient	22	inference	13
reinforcement	21	using	13

데이터 시각화

- 논문 제목의 단어에 대한 빈도수 및 WordCloud

ALL

```
all <- paste(Name_Frequency(CVPR_Paper_Name), Name_Frequency(NIPS_Paper_Name),
Name_Frequency(ICML_Paper_Name))
sort(table(strsplit(x = all, split = " ")), decreasing = TRUE)[1:20]
letterCloud(table(strsplit(x = all, split = " ")), word = "PAPER", size = 20, color = 'random-light', backgroundColor = 'White')
```



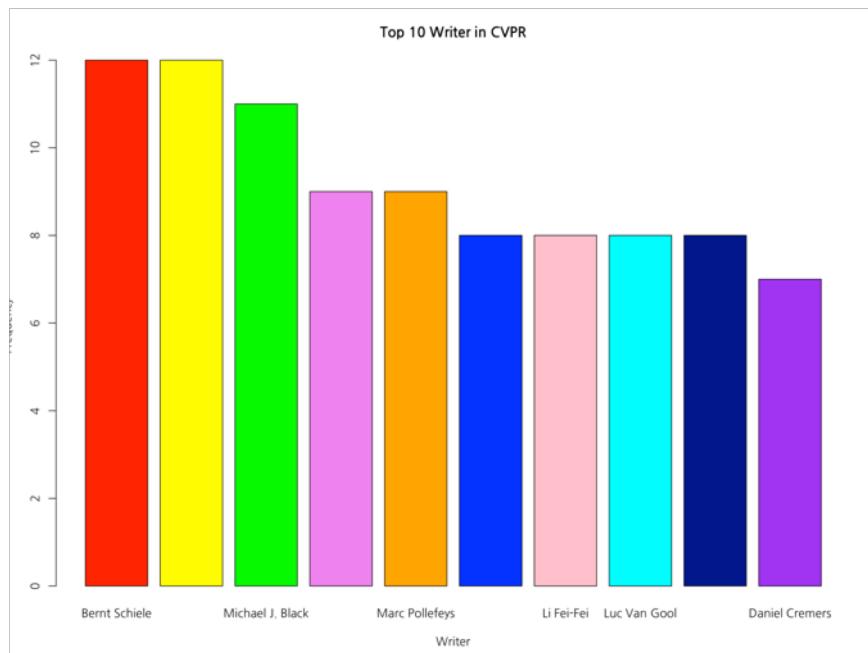
""	2803	d	73
learning	426	optimization	69
deep	227	data	67
networks	221	estimation	67
neural	161	recognition	65
image	108	visual	63
models	96	Detection	61
using	93	convolutional	59
via	93	object	56
network	89	online	55

데이터 시각화

- 논문 저자들의 집필한 논문 개수에 대한 Barplot

CVPR

```
colors<- c("red", "yellow", "green", "violet",
  "orange", "blue", "pink", "cyan", "darkblue", "purple")
data <- data.frame(sort(table(unlist(CVPR_Writer)), decreasing = TRUE)[1:10]) ; data
barplot(data$Freq, names.arg = data$Var1, xlab = "Writer", ylab = "Frequency", main = "Top 10 Writer in CVPR", border =
"black", col = colors)
```



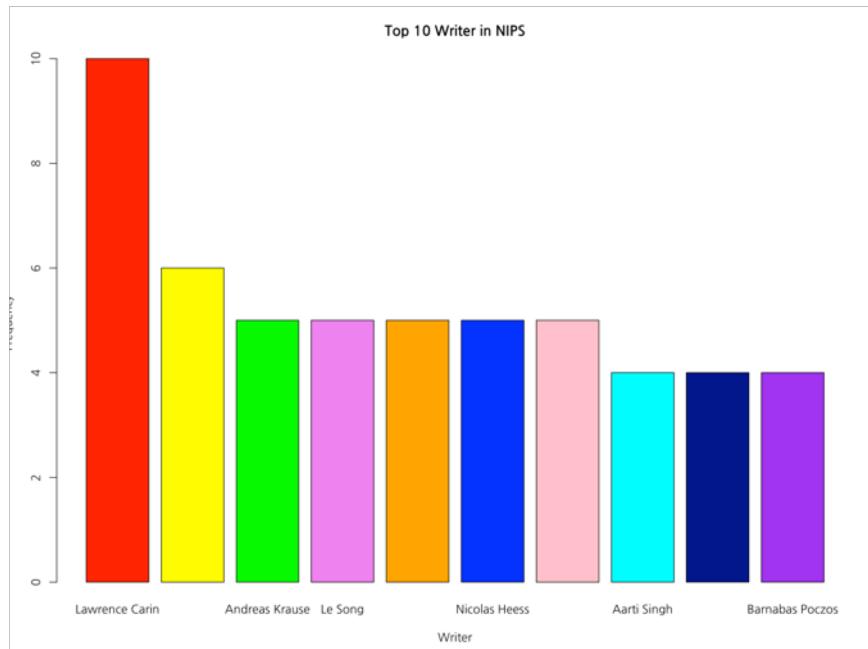
Bernt Schiele	12
Xiaogang Wang	12
Michael J. Black	11
Jiashi Feng	9
Marc Pollefeys	9
Abbinav Gupta	8
Li Fei-Fei	8
Luc Van Gool	8
Philip H. S. Torr	8
Daniel Cremers	7

데이터 시각화

- 논문 저자들의 집필한 논문 개수에 대한 Barplot

NIPS

```
data <- data.frame(sort(table(unlist(NIPS_Writer)), decreasing = TRUE)[1:10]) ; data
barplot(data$Freq, names.arg = data$Var1, xlab = "Writer", ylab = "Frequency", main = "Top 10 Writer in NIPS", border = "black", col = colors)
```



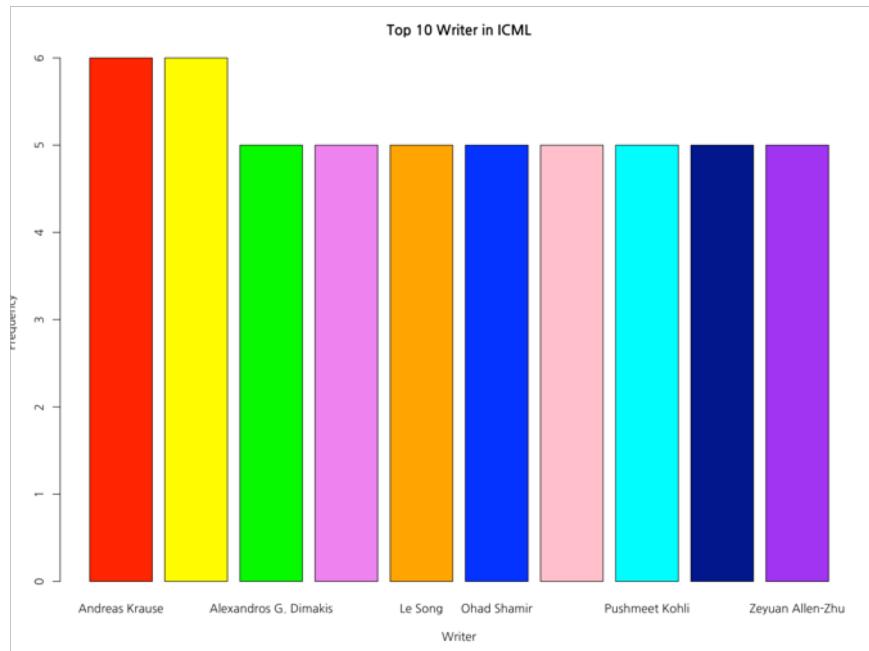
Lawrence Carin	10
Alexander Schwing	6
Andreas Krause	5
Le Song	5
Michael I. Jordan	5
Nicolas Heess	5
Razvan Pascanu	5
Aarti Singh	4
Andrew G. Wilson	4
Barnabas Poczos	4

데이터 시각화

- 논문 저자들의 집필한 논문 개수에 대한 Barplot

ICML

```
data <- data.frame(sort(table(unlist(strsplit(unlist(ICML_Writer), split = ", "))), decreasing = TRUE)[1:10]) ; data
barplot(data$Freq, names.arg = data$Var1, xlab = "Writer", ylab = "Frequency", main = "Top 10 Writer in ICML", border = "black", col = colors)
```



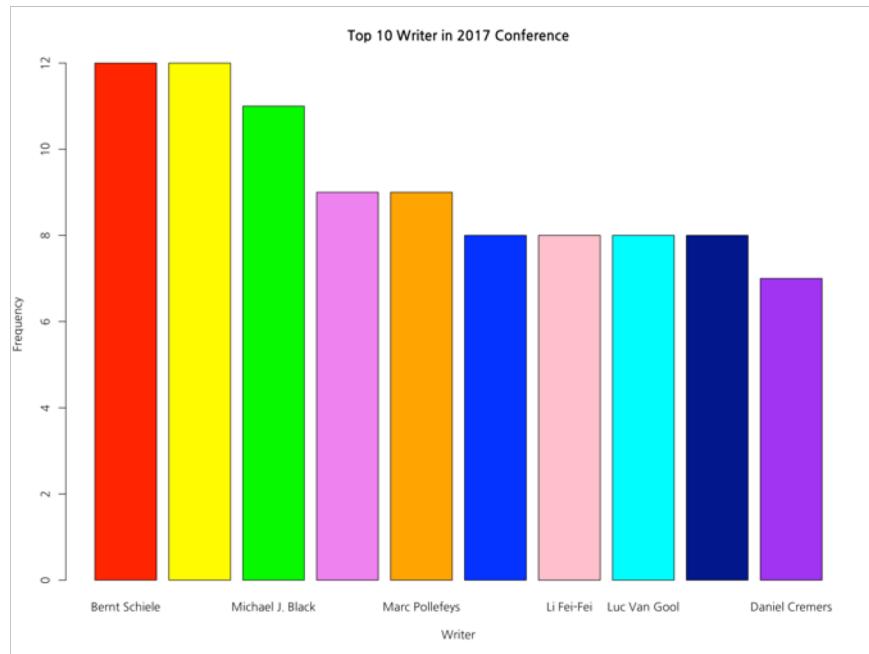
Andreas Krause	6
Zoubin Gharamani	6
Alexandros G. Dimakis	5
Koray Kavukcuoglu.	5
Le Song	5
Ohad Shamir	5
Oriol Vinyals	5
Pushmeet Kohli	5
Yuanzhi Li	5
Zeyuan Allen-Zhu	5

데이터 시각화

- 논문 저자들의 집필한 논문 개수에 대한 Barplot

ALL

```
all <- unlist(CVPR_Writer, NIPS_Writer, strsplit(unlist(ICML_Writer), split = ", "))
data <- data.frame(sort(table(all), decreasing = TRUE)[1:10]) ; data
barplot(data$Freq, names.arg = data$all, xlab = "Writer", ylab = "Frequency", main = "Top 10 Writer in 2017 Conference",
border = "black", col = colors)
```



Bernt Schiele	12
Xiaogang Wang	12
Michael J. Black	11
Jiashi Feng	9
Marc Pollefeys	9
Abhinav Gupta	8
Li Fei-Fei	8
Luc Van Gool	8
Philip H. S. Torr	8
Daniel Cremers	7

데이터 시각화

- 논문 내용의 단어에 대한 빈도 수 및 WordCloud

CVPR

CVPR_Word_After[1:20]

```
letterCloud(CVPR_Word_After, word = "CVPR", size = 20, color = 'random-light', backgroundColor = 'black')
```



“”	9803	Layer	76
Image	140	set	73
D	138	using	73
weights	104	information	70
m	100	method	69
s	96	model	69
can	95	question	69
network	92	training	69
convolutional	89	images	68
j	89	k	67

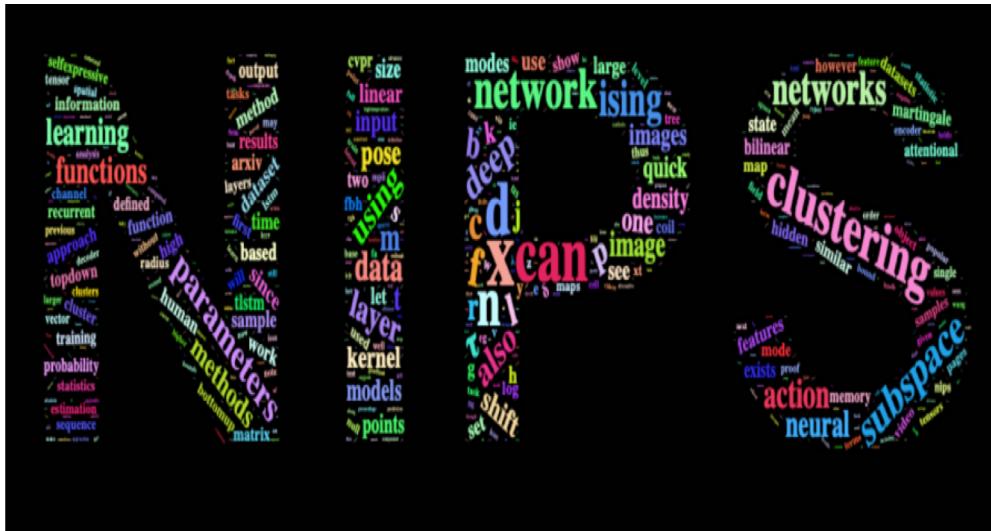
데이터 시각화

- 논문 내용의 단어에 대한 빈도 수 및 WordCloud

NIPS

NIPS_Word_After[1:20]

```
letterCloud(NIPS_Word_After, word = "NIPS", size = 20, color = 'random-light', backgroundColor = 'black')
```



“”	9871	ising	75
model	146	subspace	74
x	135	c	71
can	114	networks	69
d	109	deep	67
attention	108	l	66
n	102	parameters	66
clusteering	97	also	64
network	81	T	64
f	80	p	61

데이터 시각화

- 논문 내용의 단어에 대한 빈도 수 및 WordCloud

ICML

ICML_Word_After[1:20]

```
letterCloud(ICML_Word_After, word = "ICML", size = 20, color = 'random-light', backgroundColor = 'black')
```



“”	9873	k	95
et	182	search	87
n	165	function	86
t	163	can	85
algorithm	141	policy	83
p	127	al	80
learning	124	d	78
optimization	121	s	76
x	105	f	74
distribution	95	regret	74

데이터 시각화

- 논문 내용의 단어에 대한 빈도 수 및 WordCloud

ALL

```
all <- paste(CVPR Paper Contents, NIPS Paper Contents, ICML Paper Contents)
```

```
all <- Name_Frequency(all)
```

```
all <- sort(table(strsplit(x = all, split = " ")), decreasing = TRUE) ; all[1:20]
```

```
letterCloud(all, word = "Paper", size = 20, color = 'random-light', backgroundColor = 'black')
```



“”	29547	s	217
d	325	k	208
2x	297	m	205
can	294	f	195
n	290	image	193
t	261	j	186
p	248	network	186
model	244	c	184
learning	237	b	181
et	225	r	180

데이터 시각화

- 논문 내용의 단어에 대한 관계 그래프

Word Relationship

```
if(!require("statnet.common")) install.packages("statnet.common"); library(statnet.common)
if(!require("qgraph")) install.packages("qgraph"); library(qgraph)
```

CVPR

```
corpus <- Corpus(VectorSource(CVPR_Paper_Contents))
tdm <- TermDocumentMatrix(corpus)
tdm.matrix <- as.matrix(tdm)
word.count <- rowSums(tdm.matrix)
word.order <- order(word.count, decreasing=TRUE)
freq.words <- tdm.matrix[word.order[1:20], ]
co.matrix <- freq.words %*% t(freq.words)
freq.words
qgraph(co.matrix,
  layout = 'spring',
  diag = FALSE,
  vsize = 7,
  label.prop = 0.5,
  edge.labels = TRUE,
  edge.label.cex = 0.3,
  theme = 'classic')
```

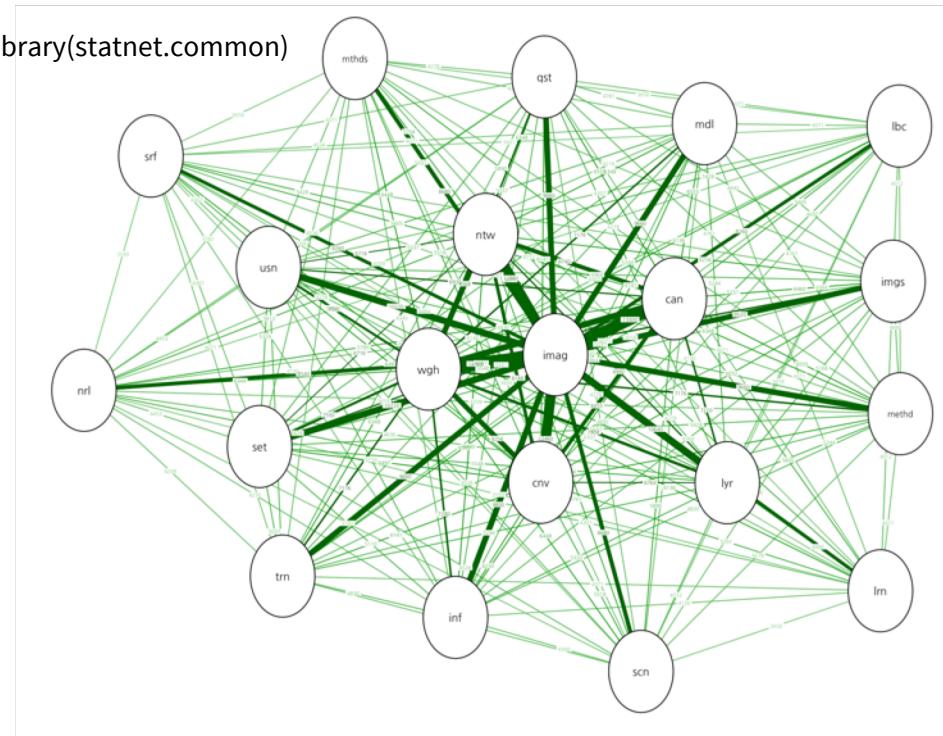


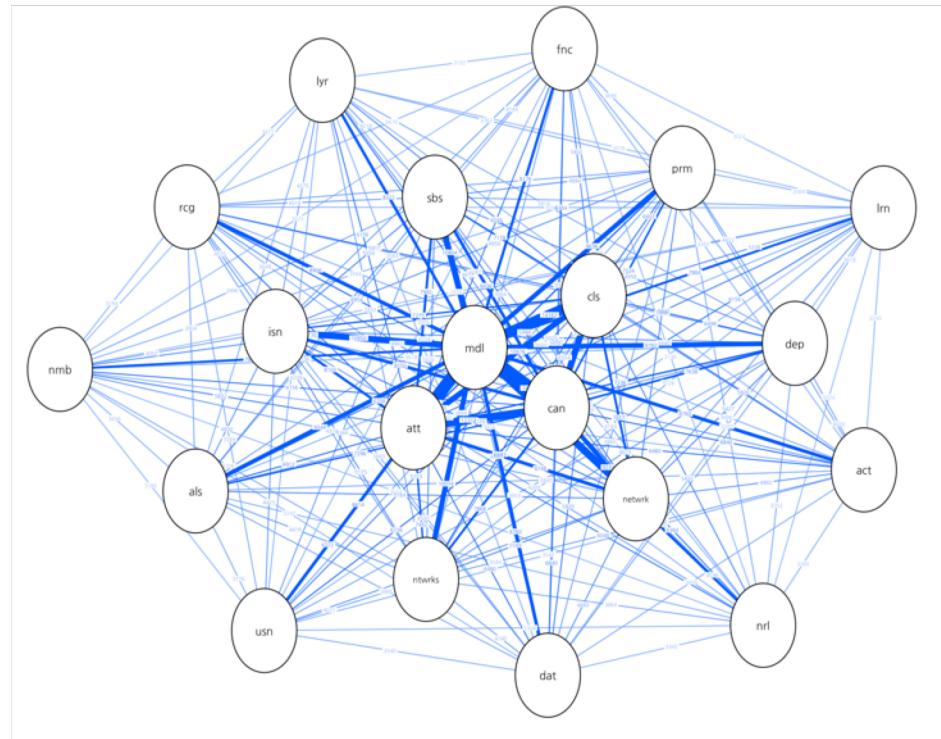
Image	Weights	Can	Network	Convolutional	Layer	Set	Using	Information	method
140	104	95	92	89	76	73	73	70	69
Model	Question	Training	Images	Methods	Scene	Neural	Ibcnn	Learning	surface
69	69	69	68	62	62	61	59	59	59

데이터 시각화

- 논문 내용의 단어에 대한 관계 그래프

NIPS

```
corpus <- Corpus(VectorSource(NIPS_Paper_Contents))
tdm <- TermDocumentMatrix(corpus)
tdm.matrix <- as.matrix(tdm)
word.count <- rowSums(tdm.matrix)
word.order <- order(word.count, decreasing=TRUE)
freq.words <- tdm.matrix[word.order[1:20], ]
co.matrix <- freq.words %*% t(freq.words)
freq.words
qgraph(co.matrix,
      layout = 'spring',
      diag = FALSE,
      vsize = 7,
      label.prop = 0.5,
      edge.labels = TRUE,
      edge.label.cex = 0.3,
      theme = 'Hollywood')
```



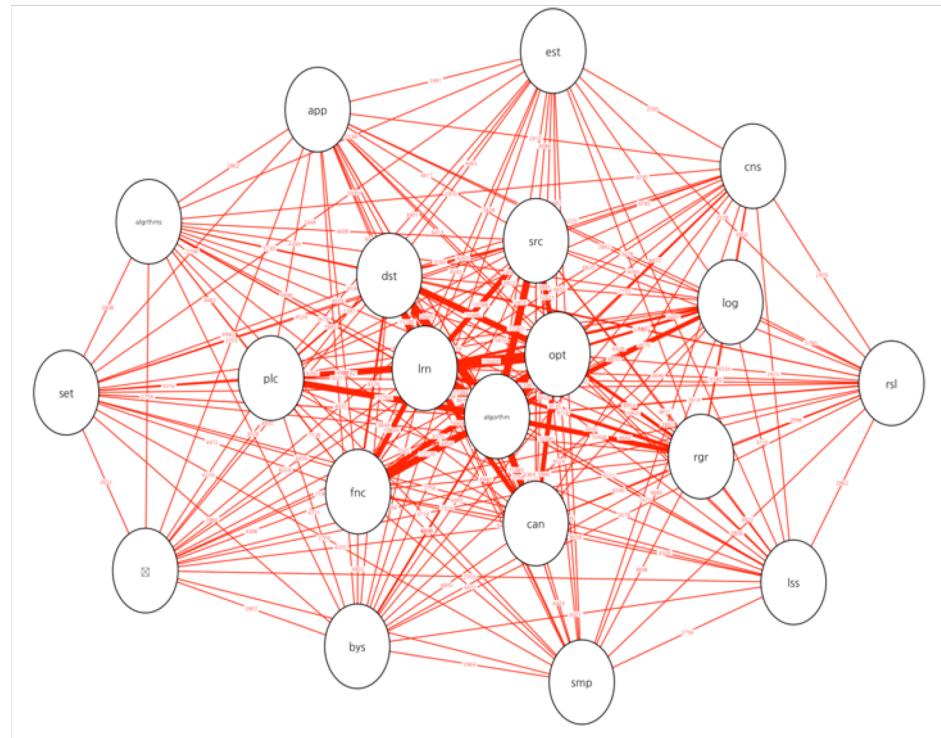
Model	Can	Attention	Clustering	Network	Ising	Subspace	Networks	Deep	Parameters
146	114	108	97	81	75	74	69	67	66
Also	Recognition	Action	Data	Using	Layer	Functions	neural	Learning	number
64	61	60	60	59	57	56	56	54	54

데이터 시각화

- 논문 내용의 단어에 대한 관계 그래프

ICML

```
corpus <- Corpus(VectorSource(ICML_Paper_Contents))
tdm <- TermDocumentMatrix(corpus)
tdm.matrix <- as.matrix(tdm)
word.count <- rowSums(tdm.matrix)
word.order <- order(word.count, decreasing=TRUE)
freq.words <- tdm.matrix[word.order[1:20], ]
co.matrix <- freq.words %*% t(freq.words)
freq.words
qgraph(co.matrix,
      layout = 'spring',
      diag = FALSE,
      vsize = 7,
      label.prop = 0.5,
      edge.labels = TRUE,
      edge.label.cex = 0.3,
      theme = 'gimme')
```



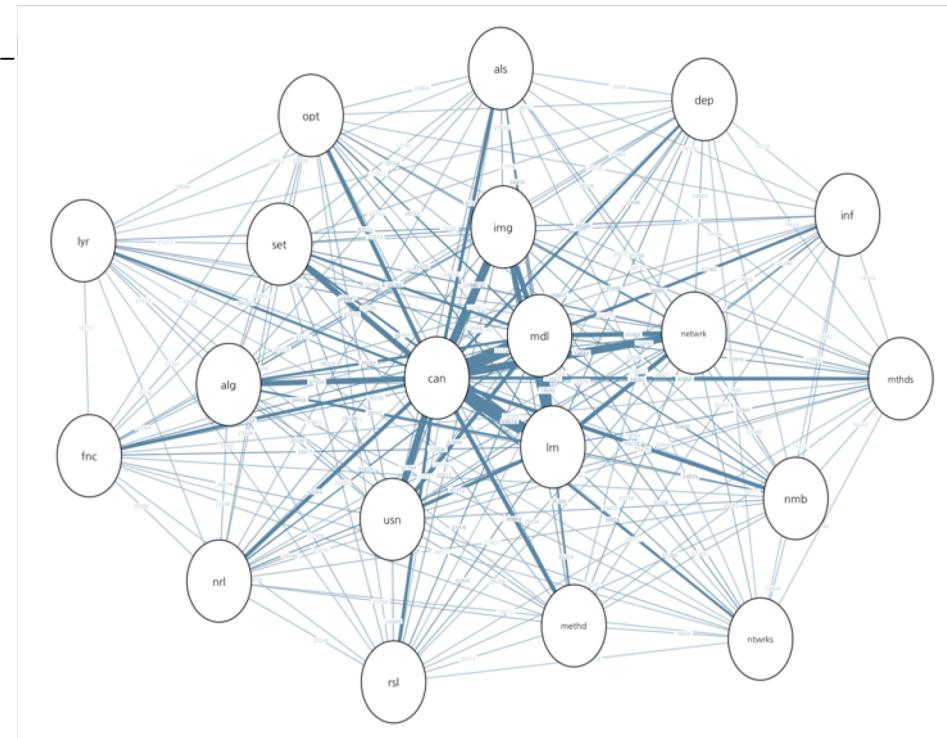
Algorithm	Learning	Optimization	Distribution	Search	Function	Can	Policy	Regret	Log
141	124	121	95	87	86	85	83	74	70
Bayesian	Constraint	Algorithms	Results	Approach	Loss	Samples	Set	0	estimator
57	55	54	54	53	53	52	52	51	47

데이터 시각화

- 논문 내용의 단어에 대한 관계 그래프

ALL

```
Contents <- paste(CVPR_Paper_Contents, NIPS_Paper_Contents, ICML_Contents)
corpus <- Corpus(VectorSource(Contents))
tdm <- TermDocumentMatrix(corpus)
tdm.matrix <- as.matrix(tdm)
word.count <- rowSums(tdm.matrix)
word.order <- order(word.count, decreasing=TRUE)
freq.words <- tdm.matrix[word.order[1:20], ]
co.matrix <- freq.words %*% t(freq.words)
freq.words
qgraph(co.matrix,
       layout = 'spring',
       diag = FALSE,
       vsize = 7,
       label.prop = 0.5,
       edge.labels = TRUE,
       edge.label.cex = 0.3,
       theme = 'TeamFortress')
```



Can	Model	Learning	Image	Network	Using	Algorithm	Set	Method	Optimization
294	244	237	193	186	176	161	161	149	148
Number	Neural	Also	Function	Methods	Results	Information	Deep	Layer	Networks
147	146	141	141	139	139	136	134	133	132

결론

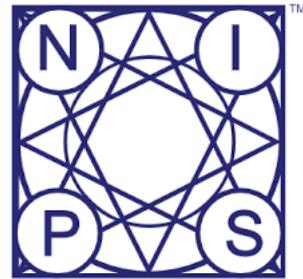
결과에 대한 해석

▶ 결과 해석



CVPR Conference (783)

Image, weights,
Network, Convolutional



NIPS Conference (679)

Deep, Optimization,
Attention, Clustering



ICML Conference (434)

Algorithms, Optimization,
Distribution, Stochastic

Deep Learning, Neural Network,
Optimization, Gradient, models

질의응답

감사합니다