Python Programming

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Read/Write Text

```
# mode = 't'
txt_name = 'demo.txt'
g = open(txt_name, 'rt')

new_txt_name = 'my_demo_t.txt'
with open(new_txt_name, 'wt') as f:
    f.write(g.read())
g.close()
```

Read/Write Text

```
# mode = 'b'
txt_name = 'demo.txt'
g = open(txt_name, 'rb')

new_txt_name = 'my_demo_b.txt'
with open(new_txt_name, 'wb') as f:
    f.write(g.read())
g.close()
```

Read/Write PDF

```
pdf_name = 'first.pdf'
g = open(pdf_name, 'rb')

new_pdf_name = 'my_first.pdf'
with open(new_pdf_name, 'wb') as f:
    f.write(g.read())
g.close()
```

Read/Write Image

```
img_name = 'logo.jpg'
g = open(img_name, 'rb')

new_img_name = 'my_logo.jpg'
with open(new_img_name, 'wb') as f:
    f.write(g.read())
g.close()
```

Download PDF

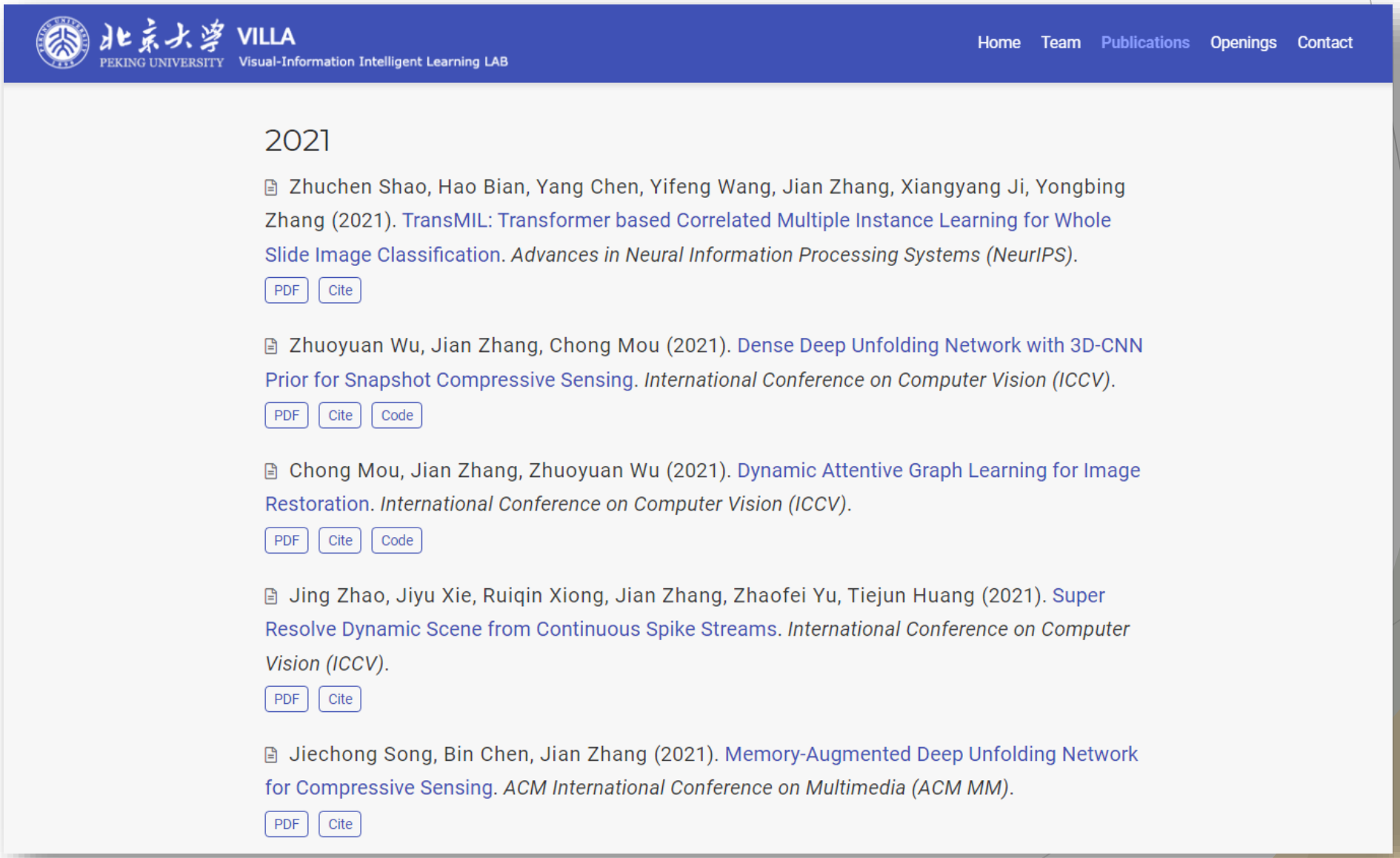
```
import requests

url = "https://openaccess.thecvf.com/content/ICCV2021/papers/Kim_Continual_Learning_on_Noisy_Data_Streams_via_Self-Purified_Replay_ICCV_2021_paper.pdf"

response = requests.get(url)

filename = "mypaper.pdf"

with open(filename, "wb") as f:
    f.write(response.content)

print('Finished!')
```

Download Image

```
import requests

url = "https://statics.phbs.pku.edu.cn/statics/images/phbs_2017/index-logo.jpg"

response = requests.get(url)

filename = "mylogo.jpg"

with open(filename, "wb") as f:
    f.write(response.content)

print('Finished!')
```

Batch Download PDF

http://villa.jianzhang.tech/pub/



Web Crawler

北京大学 PEKING UNIVERSITY VILLA Visual-Information Intelligent Learning LAB

发表日期： 2021-12-10 New

HybridSNN：通过增强自适应尖峰神经网络结合生物机器的优势

文章标题： HybridSNN: Combining Bio-Machine Strengths by Boosting Adaptive Spiking Neural Networks

期刊名称： TNNLS

所有作者： Jiangrong Shen, Yu Zhao, Jian K. Liu, Yueming Wang

关键词： Adaptive structures, boosting, HybridSNN, spiking neural networks (SNNs).

文章链接： https://ieeexplore.ieee.org/document/9646435/

▶ 中英摘要

发表日期： 2021-12-10 New

基于自适应神经网络的量化测量切换系统观测器设计

文章标题： Adaptive Neural Network-Based Observer Design for Switched Systems With Quantized Measurements

期刊名称： TNNLS

所有作者： Liheng Chen, Yanzheng Zhu, Choon Ki Ahn

关键词： Actuator degradation, adaptive neural network (NN) observer, persistent dwell time, signal quantization, switched systems.

文章链接： https://ieeexplore.ieee.org/document/9646412/

▶ 中英摘要

Batch Download PDF

```
from bs4 import BeautifulSoup
import requests

url = "https://villa.jianzhang.tech/pub/"

response = requests.get(url)
bs = BeautifulSoup(response.text, "html.parser")
pdf_tags = bs.find_all("a", class_="btn btn-outline-primary my-1 mr-1 btn-sm", rel="noopener")

for tag in pdf_tags:
    print(tag.get("href"))
```

Batch Download PDF

```
pdf_urls = []
for tag in pdf_tags:
    if tag.get("href").endswith(".pdf"):
        pdf_urls.append(tag.get("href"))

for url in pdf_urls:
    print("downloading:", url)
    response = requests.get(url)
    filename = url.split("/")[-1]
    print("filename:", filename)
    with open(filename, "wb") as f:
        f.write(response.content)
```

Batch Download PDF

```
from bs4 import BeautifulSoup
import requests

url = "https://villa.jianzhang.tech/pub/"

response = requests.get(url)
bs = BeautifulSoup(response.text, "html.parser")
pdf_tags = bs.find_all("a", class_="btn btn-outline-primary my-1 mr-1 btn-sm")

for tag in pdf_tags:
    print(tag.get("href"))
```

Web Crawler

```
from bs4 import BeautifulSoup
import requests

url = "http://106.55.10.163:60001/"
response = requests.get(url)
bs = BeautifulSoup(response.text, "html.parser")
paper_tags = bs.find_all("div", class_="article_entry")

for paper_tag in paper_tags:
    abstract = paper_tag.find_all('p')
    print(abstract[0].text)
```

Web Crawler

```
from bs4 import BeautifulSoup
import requests

url = "http://106.55.10.163:60001/"
response = requests.get(url)
bs = BeautifulSoup(response.text, "html.parser")
paper_tags = bs.find_all("div", class_="article_entry")

for paper_tag in paper_tags:
    abstract = paper_tag.find_all('p')
    print(abstract[1].text)
```

Baidu Translation API

https://fanyi-api.baidu.com/

Baidu Translation API

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Baidu Translation API https://fanyi-api.baidu.com/product/113

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API Demo

Baidu_Text_transAPI.py

```
import requests
import random
import json
from hashlib import md5

# Set your own appid/appkey.
appid = 'INPUT_YOUR_APPID'
appkey = 'INPUT_YOUR_APPKEY'

# For list of language codes, please refer to `https://api.fanyi.baidu.com/doc/21`
from_lang = 'en'
to_lang =  'zh'

endpoint = 'http://api.fanyi.baidu.com'
path = '/api/trans/vip/translate'
url = endpoint + path
```

API Demo

Baidu_Text_transAPI.py

```
query = 'Hello World! This is 1st paragraph.\nThis is 2nd paragraph.'
# Generate salt and sign
def make_md5(s, encoding='utf-8'):
    return md5(s.encode(encoding)).hexdigest()

salt = random.randint(32768, 65536)
sign = make_md5(appid + query + str(salt) + appkey)

# Build request
headers = {'Content-Type': 'application/x-www-form-urlencoded'}
payload = {'appid': appid, 'q': query, 'from': from_lang, 'to': to_lang, 'salt': salt, 'sign': sign}

# Send request
r = requests.post(url, params=payload, headers=headers)
result = r.json()
# Show response
print(json.dumps(result, indent=4, ensure_ascii=False))
```

API Function

```
def translate_api(input_text):
    appid = ‘xxxxxx'
    appkey = ‘xxxxxx'
    def make_md5(s, encoding='utf-8'):
        return md5(s.encode(encoding)).hexdigest()
    from_lang = 'en'
    to_lang = 'zh'
    endpoint = 'http://api.fanyi.baidu.com'
    path = '/api/trans/vip/translate'
    url = endpoint + path
    query = input_text
    salt = random.randint(32768, 65536)
    sign = make_md5(appid + query + str(salt) + appkey)
    headers = {'Content-Type': 'application/x-www-form-urlencoded'}
    payload = {'appid': appid, 'q': query, 'from': from_lang, 'to': to_lang, 'salt': salt, 'sign': sign}
    r = requests.post(url, params=payload, headers=headers)
    result = r.json()
    return result['trans_result'][0]['dst']
```

Homework

Take the abstracts of the first 20 papers in the given URL, translate them into Chinese, and write them into the file named 'my_abstract.txt’.

URL = https://openaccess.thecvf.com/ICCV2021?day=2021-10-12

Questions?