

# SKKU Lab Recommendation Service : FindMyLab

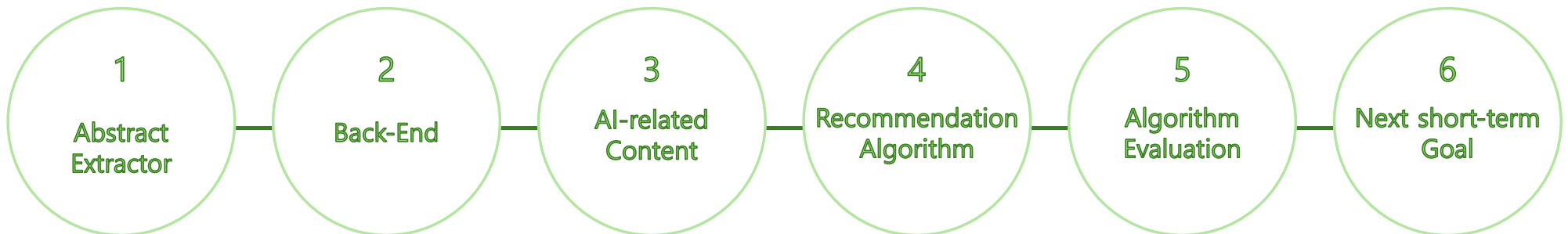
## Weekly Progress Meeting(1)

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Team J (Last Lap) 김현진 송민석 장민석 조재희

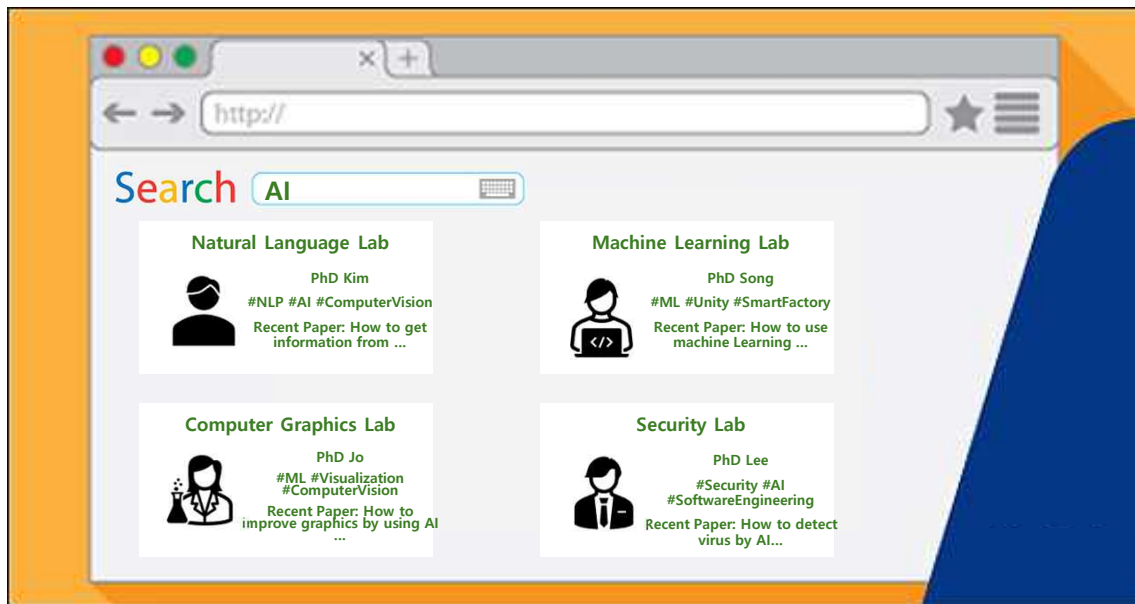
# Contents

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# Topic Overview

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# 1. Abstract Extractor



| Works (17)  |  | Sort                             |
|---|--|----------------------------------|
| <b>ABDM: Anonymity-based Big Data Management for Protecting Healthcare Data from Privacy Breach</b>   |  |                                  |
| IEEE Network<br>2024   Journal article<br>DOI: <a href="https://doi.org/10.1109/MNET.2024.3476380">10.1109/MNET.2024.3476380</a><br>CONTRIBUTORS: Jinyong Kim; Jaehoon Jeong; Jeonghyeon Kim; Joomin Kim  |  | <a href="#">Show more detail</a> |
| Source:  Crossref  |  |                                  |
| <b>ECMAC: Edge-Assisted Cluster-Based MAC Protocol in Software-Defined Vehicular Networks</b>   |  |                                  |
| IEEE Transactions on Vehicular Technology<br>2024   Journal article<br>DOI: <a href="https://doi.org/10.1109/TVT.2024.3390991">10.1109/TVT.2024.3390991</a><br>CONTRIBUTORS: Yiwen Shen; Jaehoon Jeong; Junghyun Jun; Tae Oh; Youngmi Baek            |  | <a href="#">Show more detail</a> |
| Source:  Crossref  |  |                                  |
| <b>SPT: Security Policy Translator for Network Security Functions in Cloud-Based Security Services</b>  |  |                                  |
| IEEE Transactions on Dependable and Secure Computing<br>2024   Journal article<br>DOI: <a href="https://doi.org/10.1109/TPSC.2024.3371788">10.1109/TPSC.2024.3371788</a><br>CONTRIBUTORS: Patrick Lingga; Jaehoon Jeong; Jinhyuk Yang; Jeonghyeon Kim |  | <a href="#">Show more detail</a> |
| Source:  Crossref  |  |                                  |
| <b>An efficient beam sweeping scheme with backup paging occasions in NR-Unlicensed Spectrum</b>   |  |                                  |
| Computer Networks<br>2024-12   Journal article  |  | <a href="#">Show more detail</a> |

# 1. Abstract Extractor

```
StatusCode      : 200
StatusDescription : OK
Content         : {"status":"ok","message-type":"work-list","message-version":"1.0.0","message":{"facets":{},"total-r
                  ta...
RawContent      : HTTP/1.1 200 OK
                  transfer-encoding: chunked
                  access-control-expose-headers: Link
                  access-control-allow-headers: X-Requested-With, Accept, Accept-Encoding, Accept-Charset, Accept-Lan
                  guage, Accept-Range...
Forms           : {}
Headers         : [{"transfer-encoding, chunked"}, {"access-control-expose-headers, Link"}, {"access-control-allow-headers
                  , X-Requested-With, Accept, Accept-Encoding, Accept-Charset, Accept-Language, Accept-Ranges, Cache-
                  Control"}, {"access-control-allow-origin, *}...}
Images          : {}
InputFields     : {}
Links           : {}
ParsedHtml      : mshtml.HTMLDocumentClass
RawContentLength : 197746
```

[CrossRef API]  
Get Work List by ORCID

IEEE Xplore DOI Metadata API [List Methods](#) [Expand Methods](#)

[GET](#) Get Articles by DOI /api/v1/articles/doi/{DOI\_Values}

Request article metadata by DOI

| Parameter    | Value  | Type   | Description   |
|--------------|--|--------|---|
| {DOI_Values} | <input type="text" value="10.1109/76.564123"/> | string | DOI Value(s) this can be a single DOI or a comma separated string of DOIs values (up to 25)   |
| format       | <input type="text" value="JSON"/>              | string | Response Format (Options are json or xml. This parameter is not required, when omitted the response format will be json by default) |

[Try it!](#)

[IEEE API]  
Extract Abstract by DOI

# 1. Abstract Extractor

## 학술지 논문

- (2024) ISI-Mitigating Character Encoding for Molecular Communications via Diffusion. IEEE WIRELESS COMMUNICATIONS LETTERS. 13, 1
- (2022) Neural Min-Sum Decoding for Generalized LDPC Codes. IEEE COMMUNICATIONS LETTERS. 26, 12
- (2022) Molecular Communication in Inhomogeneous Diffusion Channels. IEEE WIRELESS COMMUNICATIONS LETTERS. 11, 9
- (2022) Neural Network aided Digital Self-Interference Cancellation for Full-Duplex Communication over Time-Varying Channels. IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY. 71, 6
- (2022) 6G R&D Vision: Requirements and Candidate Technologies. JOURNAL OF COMMUNICATIONS AND NETWORKS. 24, 2
- (2022) Analysis and Design of QC-LDPC Coded BICM Ensembles Based on RCA Density Evolution. IEEE TRANSACTIONS ON COMMUNICATIONS. 70, 4
- (2022) Neural Network Aided Impulsive Perturbation Decoding for Short Raptor-Like LDPC Codes. IEEE WIRELESS COMMUNICATIONS LETTERS. 11, 2
- (2021) Molecular Communication With Passive Receivers in Anomalous Diffusion Channels. IEEE WIRELESS COMMUNICATIONS LETTERS. 10, 10

[SKKU EEE Faculty Page]  
[https://ice.skku.edu/eng\\_ice/intro/faculty\\_elec.do](https://ice.skku.edu/eng_ice/intro/faculty_elec.do)

ISI-Mitigating Character Encoding for Molecular Communications via Diffusion

검색결과 12개 (0.18초)

**ISI-mitigating character encoding for molecular communications via diffusion**

H.Hyun, C.Lee, M.Wen, S.H.Kim... - ... **Communications Letters**, 2023 - [ieeexplore.ieee.org](https://ieeexplore.ieee.org)

... used for lossless data compression [13], takes **character** frequency into account. However, the occurrence of adjacent bit-1s in Huffman codewords renders it unsuitable for MC ...

☆ 저장 2인용 3회 인용 관련 학술자료 전체 3개의 버전

[Google Scholar]

## 2. Back-End

### API

메인 페이지 : /main

main page

키워드 검색 : /list/keyword

```
// request
{
  keyword (String) : 검색어
}

//// response
// 200
{
  lists (Object Array) :
    labid (int) : 연구실 식별번호
    name (String) : 교수님 이름
    dept (String) : 교수님 학과
    tags (String Array) : 연구실 태그
}
```

API Document

```
app.post("/list/keyword", async (req, res) => {
  const { keyword } = req.body;

  // const embedding = await embedding_SBERT(keyword); 키워드 임베딩 생성
  // similarity와 research_count에 따른 추천 방식을 정해야 함

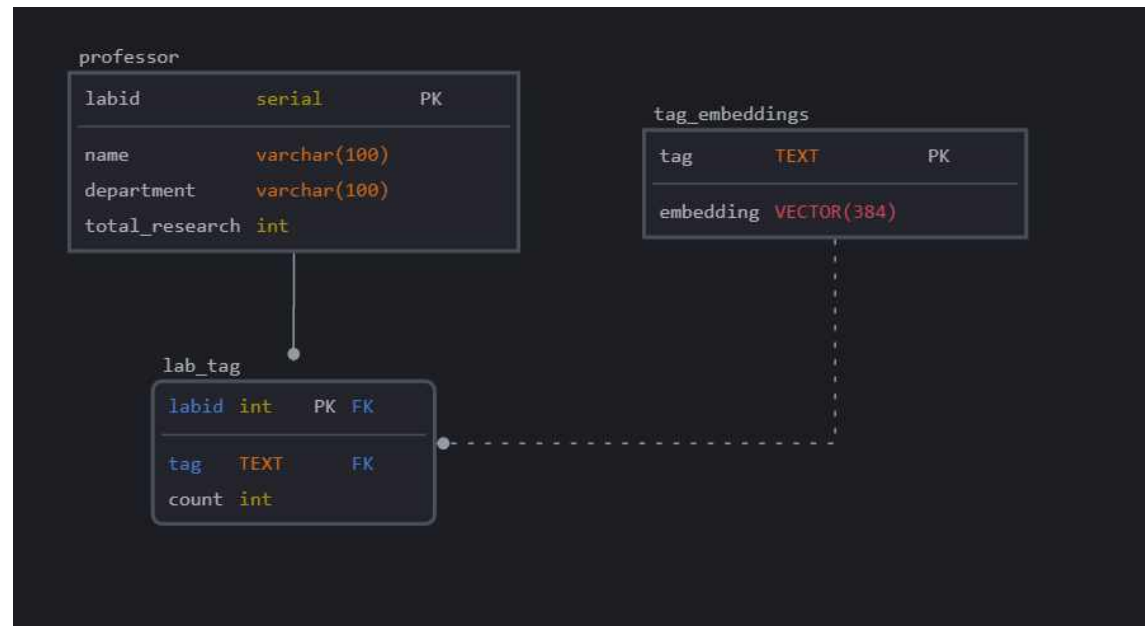
  const query = {
    text: `
      SELECT *, (1 - (research_embedding <=> $1)) AS similarity
      FROM professor
      WHERE (research_embedding <=> $1) < $2
      ORDER BY similarity DESC
      LIMIT 10
    `,
    values: [embedding, 0.5],
  };
  const result = await db.query(query);

  let resultArr = [];
  for (let i = 0; i < result.rowCount; i++) {
    let temp = {};
    temp.labid = result.rows[i].labid;
    temp.name = result.rows[i].name;
    temp.dept = result.rows[i].department;
    temp.tags = result.rows[i].research_area;
    resultArr.push(temp);
  }
}
```

Prototype Server

## 2. Back-End

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# 3. AI-related Content

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### 3. AI-related Content

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Key Words

Machine Learning, Block Chain, etc ...



# 3. AI-related Content

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## Top Two Levels of The ACM Computing Classification System (1998)

### A. General Literature

- A.0 GENERAL
- A.1 INTRODUCTORY AND SURVEY
- A.2 REFERENCE (e.g., dictionaries, encyclopedias, glossaries)
- A.m MISCELLANEOUS

### B. Hardware

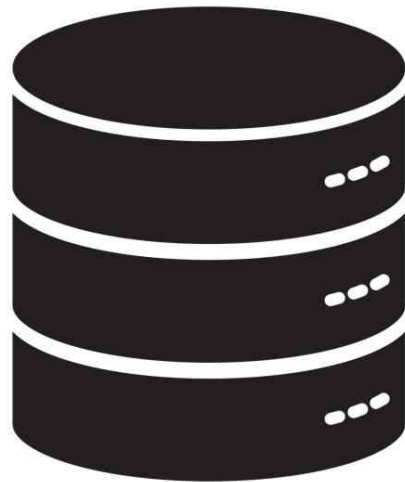
- B.0 GENERAL
- B.1 CONTROL STRUCTURES AND MICROPROGRAMMING (D.3.2)
- B.2 ARITHMETIC AND LOGIC STRUCTURES
- B.3 MEMORY STRUCTURES
- B.4 INPUT/OUTPUT AND DATA COMMUNICATIONS
- B.5 REGISTER-TRANSFER-LEVEL IMPLEMENTATION
- B.6 LOGIC DESIGN
- B.7 INTEGRATED CIRCUITS
- B.8 PERFORMANCE AND RELIABILITY 📄(NEW!) (C.4)
- B.m MISCELLANEOUS

### C. Computer Systems Organization

- C.0 GENERAL

## 4. Recommendation Algorithm

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[Database]

Keyword Frequency

Embedding

## 4. Recommendation Algorithm

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Use All Keyword

Frequency X Cosine Similarity

| Professor A      | Cosine Similarity | Frequency |
|------------------|-------------------|-----------|
| Machine Learning | 0.95              | 0.8       |
| Security         | 0.5               | 0.7       |

Weight :  $0.95 \times 0.8 + 0.5 \times 0.7$

Use Keyword : Cosine Similarity > K

Frequency of Keyword

| Professor A      | Cosine Similarity | Frequency |
|------------------|-------------------|-----------|
| Machine Learning | 0.95              | 0.8       |
| Security         | 0.5               | 0.7       |

Weight : 0.8 (ML's Frequency)

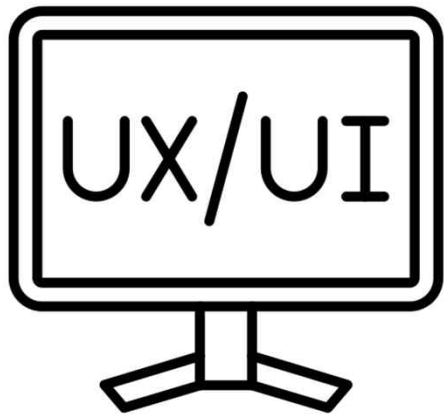
# 5. Algorithm Evaluation

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$$MAP@K = \frac{1}{|U|} \sum_{u=1}^{|U|} (AP@K)_u$$

## 6. Next Step

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Fine Tuning

# Q & A

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