

Dynamic Maps in Acemap

From Engineering Group

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Outline

- Background and Motivations
- Models and Steps
 - Front end layout
 - 3D dynamic map implement
 - Back end implement
 - Data select from MySQL
- Demo
- Future work
- Conclusion



学术地图



机构地图



话题地图



合作者地图



Background and Motivations

- Acemap is used for quick search in the areas of academic fields.
- We have no idea about something like the hottest papers or the co-authors about the certain keywords.
- The user wants to focus on what he wants to find swiftly and directly with a vague target.

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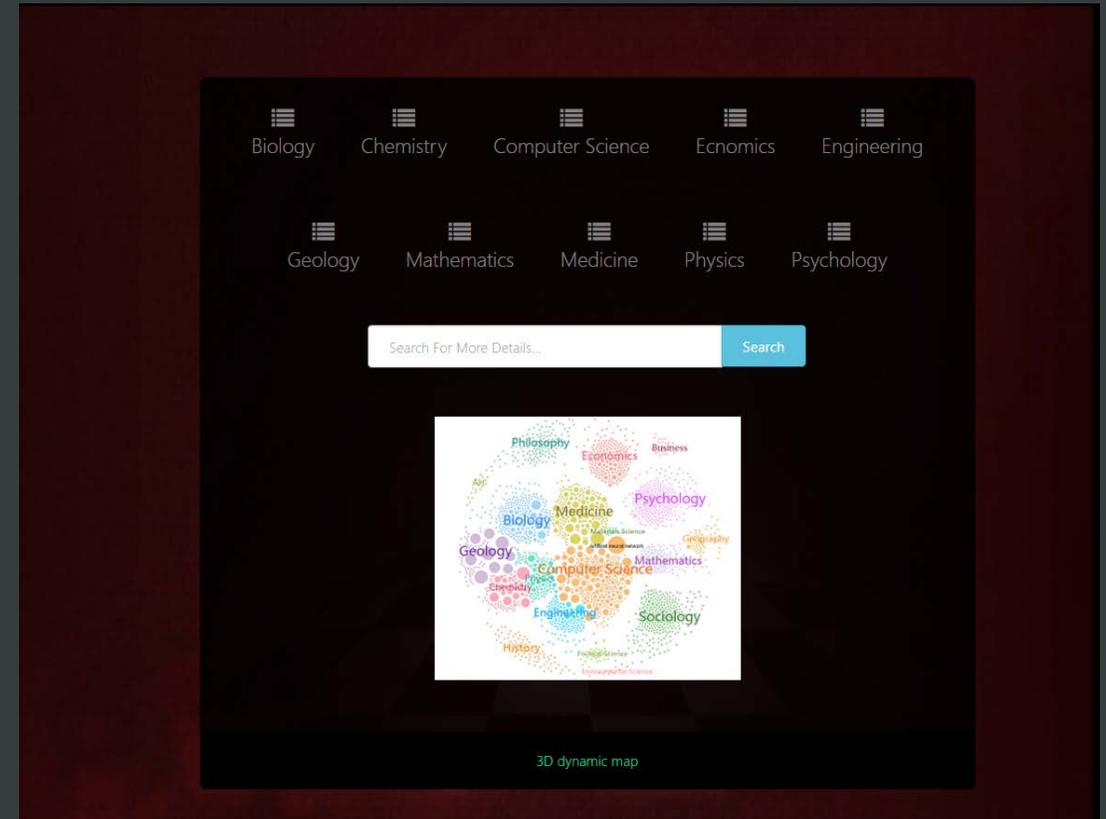
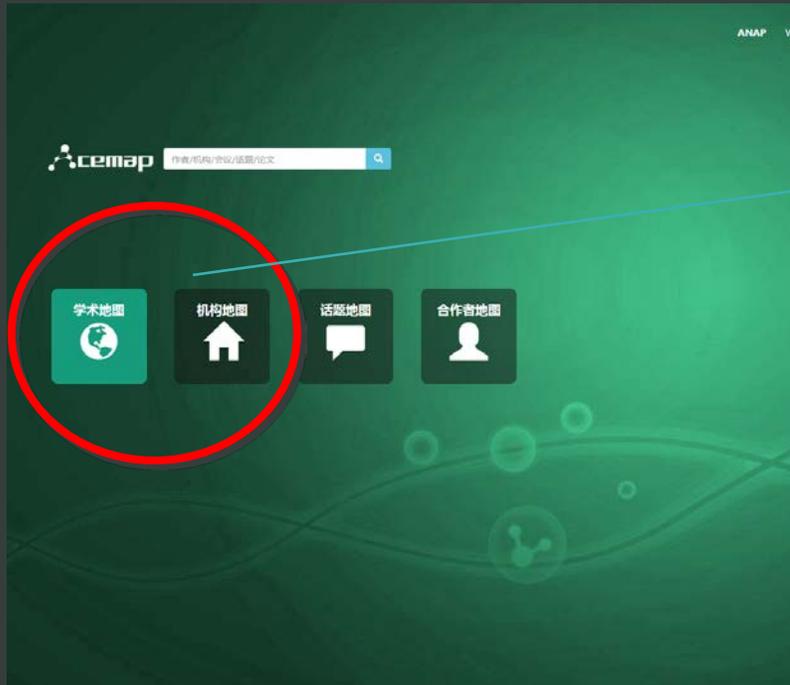
Background and Motivations

- *A Marketing Motivation*

- Few search engines has offered such function
- Offer fresh user a method to get a quick start
- Improve and add more functions to the original website

Models and Steps

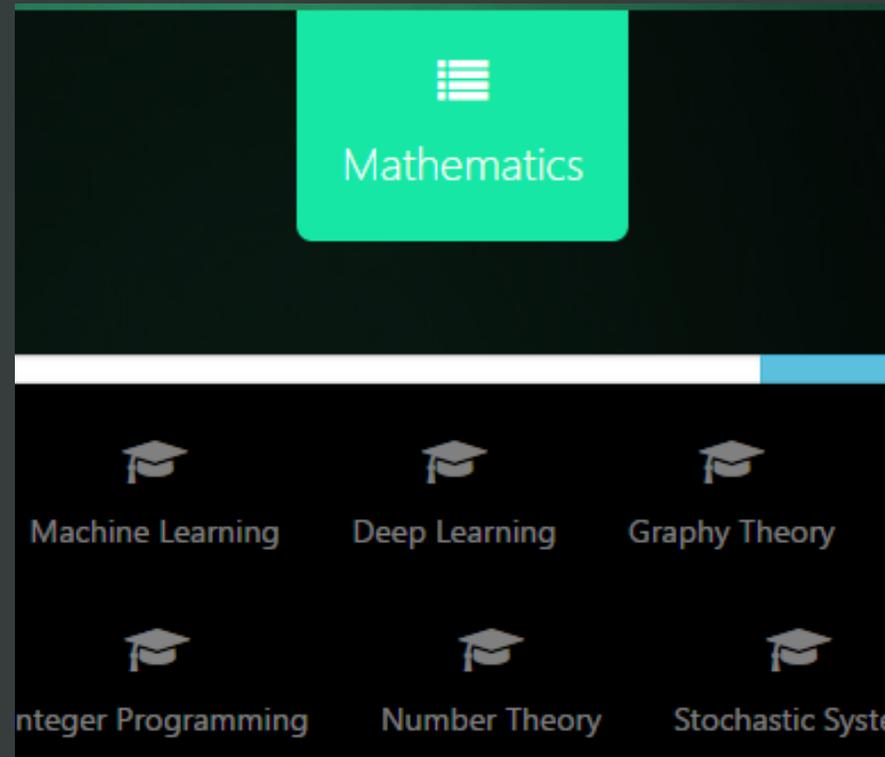
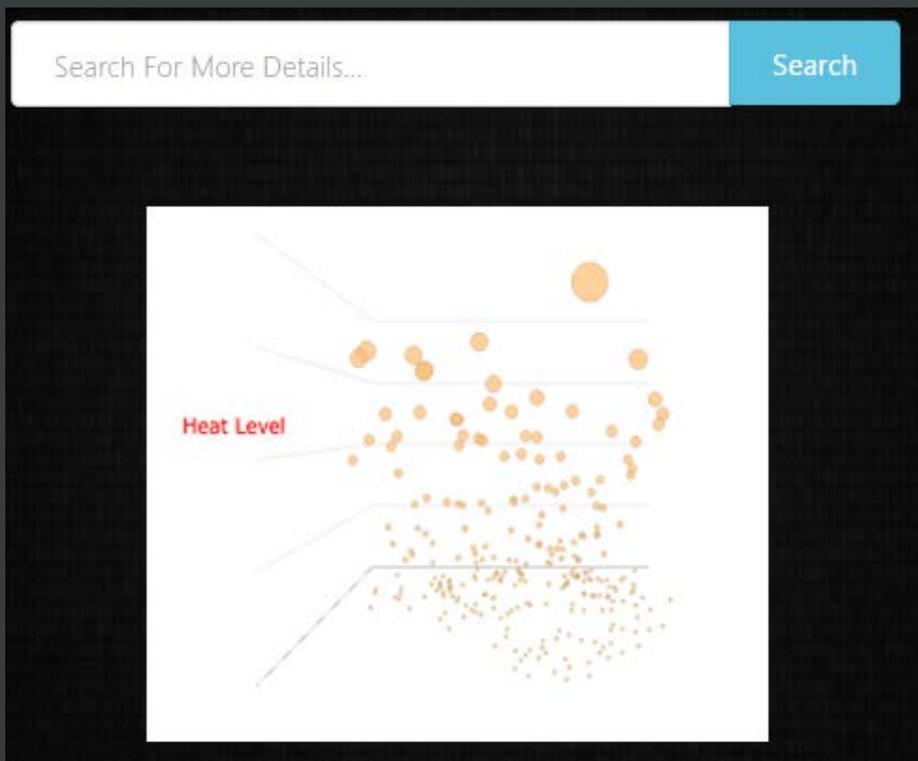
- Front end layout



Models and Steps

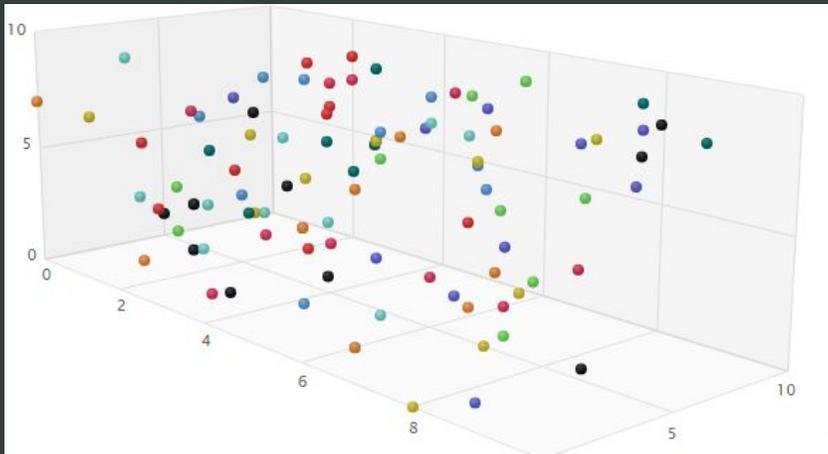
Front end layout

- Some new features
- Responsive mode
- Layered architecture

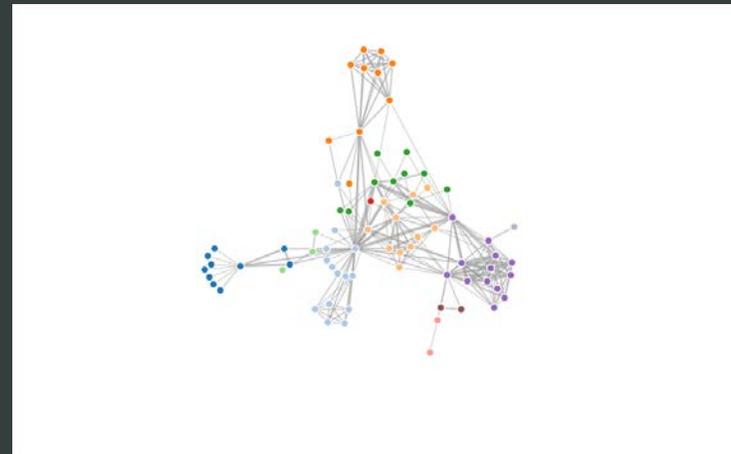


Models and Steps

- 3D dynamic map implement
 - 3D scatter chart(Highchart.js)
 - Force-directed graph(D3.js)

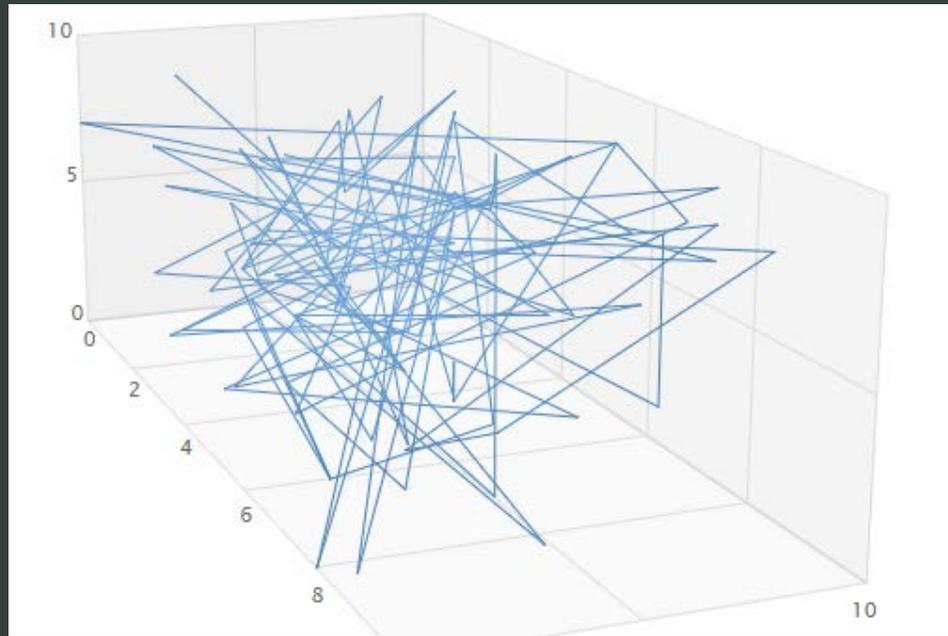


combining



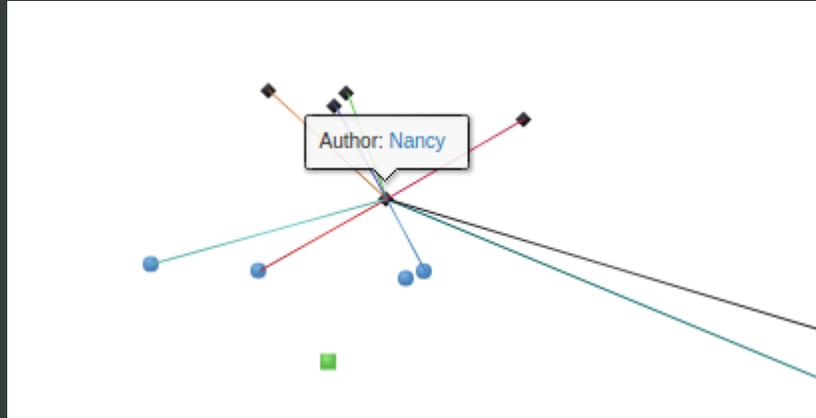
Models and Steps

- 3D dynamic map implement
 - 3D scatter chart(Highchart.js):
 - We need to deal with the charts with visible lines



Models and Steps

- 3D dynamic map implement
 - 3D scatter chart(Highchart.js)
 - Force-directed graph(D3.js):
 - It will make the layout more ordered
 - Avoid chaos and cross



Models and Steps

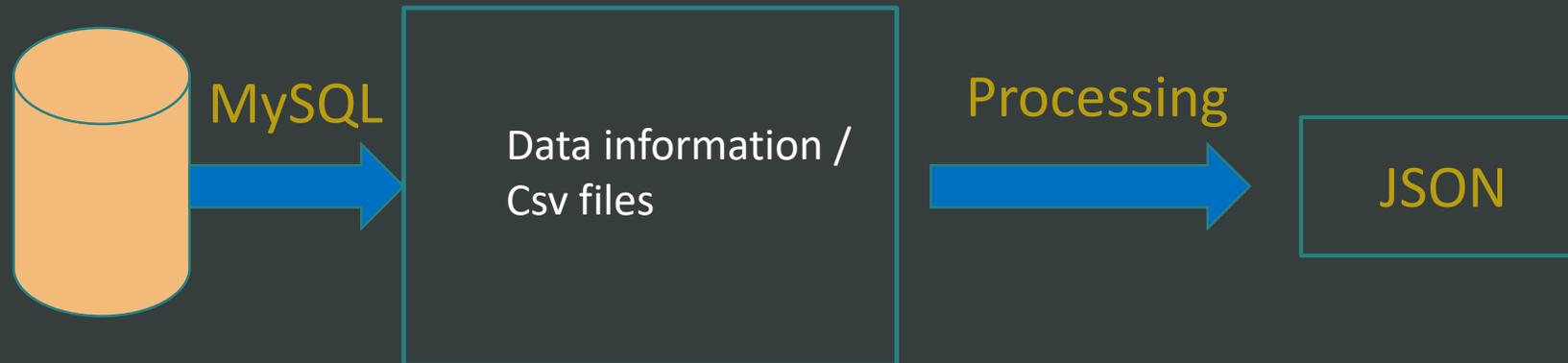
- Back end implement
 - When response, we will get the top related authors, papers and the fields in return.
 - We can also get the related information and description about the certain author, paper or the field as well.

```
<?php if ( ! defined('BASEPATH')) exit('No direct script access allowed');
class Dynamicmap extends CI_Controller {
    public function index()
    {
    }
    public function queryAbstract(){
        $id = $this->input->get('PaperID');

        $this->db_abstract = $this->load->database('abstract', TRUE);
        $sql="SELECT Abstract FROM PaperAbstractMapped where PaperID=?";
        $tmp=$this->db_abstract->query($sql,array($id)->result_array();
        $result['Abstract']=$tmp[0]['Abstract'];
        //echo
        //echo $tmp;
        echo json_encode($result);
        /*if ($tmp!=null){
            $result['Abstract']=$tmp[0]['Abstract'];
        }
        else $result['Abstract']=null;*/
        //$result['Abstract']=$tmp[0]['Abstract'];
        //echo json_encode($result);
    }
    public function querypaper(){
        $id = $this->input->get('PaperID');
        $this->db_mag = $this->load->database('mag', TRUE);
        $sql="SELECT OriginalPaperTitle,PaperPublishYear FROM Papers WHERE PaperID=?";
        $tmp=$this->db_mag->query($sql,array($id))->result_array();
        $result['Title']=$tmp[0]['OriginalPaperTitle'];
        $result['Year']=$tmp[0]['PaperPublishYear'];
        $result['node']='P'+$id;
        /*$sql="SELECT AuthorName FROM PaperAuthorAffiliations INNER JOIN Authors on PaperAuthorAffil
        $tmp=$this->db_mag->query($sql,array($id))->result_array();
        $result['AuthorNum'] = sizeof($tmp);
        for (var i=0;i<$result['AuthorNum'];i++){
            $result['Author'][i]=$tmp[i]['AuthorName'];
        }*/
        echo json_encode($result);
    }
}
```

Models and Steps

- Data select from MySQL
 - MySQL to manage and retrieve data



Models and Steps

- Data select from MySQL
 - If the user clicks on the author
 - If the user clicks on the paper
 - If the user clicks on the fields

AuthorNancy

Paper:

*Quantitative Reverse Transcription–Polymerase Chain Reaction to Study mRNA Decay: Comparison of Endpoint and Real-Time Methods , 2000

*Effect of experimental treatment on housekeeping gene expression: validation by real-time, quantitative RT-PCR , 2000

*Diverse gene expression pattern during 5-fluorouridine-induced apoptosis. , 2005

*Expression of prostate specific membrane antigen and three alternatively spliced variants of PSMA in prostate cancer patients , 2003

*Characterization of nitric oxide production following isolation of rat hepatocytes. , 2000

Co-author:

thomas d schmittgen, michael j singer, mark a tirmenstein, felicity a nichollsgrzemski

Models and Steps

- Data select from MySQL
 - If the user clicks on the author
 - If the user clicks on the paper
 - If the user clicks on the fields
 - We will get top ten papers in the certain field

```
function my_sort($arrays,$sort_key,$sort_order=SORT_DESC,
    $sort_type=SORT_NUMERIC ){
    if(is_array($arrays)){
        foreach ($arrays as $array){
            if(is_array($array)){
                $key_arrays[] = $array[$sort_key];
            }else{
                return false;
            }
        }
    }else{
        return false;
    }
    array_multisort ($key_arrays,$sort_order,$sort_type,$arrays);
    return $arrays;
}
```

Sort



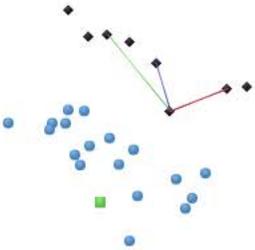
51	037F72DB	7EDFB91E	1523
52	037F72DB	7E4650DE	1095
53	037F72DB	7E72FC06	881
54	037F72DB	60AC43BD	506
55	037F72DB	7FD98C7D	465
56	037F72DB	801C5BCC	454
57	037F72DB	81231D49	428
58	037F72DB	5FC4F304	423
59	037F72DB	7D81971A	420
60	037F72DB	803BCC68	404
61	03D2C4FF	75CE501D	784
62	03D2C4FF	77024B71	193
63	03D2C4FF	7D06A156	161
64	03D2C4FF	8169CB75	161
65	03D2C4FF	7DD8511B	156
66	03D2C4FF	7A214142	150
67	03D2C4FF	796A617B	113
68	03D2C4FF	81467FF8	100
69	03D2C4FF	7CF78234	97
70	03D2C4FF	784FB5D8	89
71	042A8E46	7E4C23D6	1727
72	042A8E46	7E444C72	847
73	042A8E46	7B79F3DA	714
74	042A8E46	7D54A863	694
75	042A8E46	7530D8A6	512
76	042A8E46	75839FDD	486
77	042A8E46	78FF5629	473
78	042A8E46	77D179A5	426
79	042A8E46	7A5DD043	416
80	042A8E46	7B9A6991	385
81	04DE1397	813DD686	363
82	04DE1397	5951B2F0	298
83	04DE1397	80C1CDDF	237
84	04DE1397	7AB8BD87	185

Demo

 Author/organization/conference/topic/paper

What's new Login 中文

Dynamic Map



Author Paper Conference
 Explore

Author[Nancy](#)

Paper:

- *Quantitative Reverse Transcription–Polymerase Chain Reaction to Study mRNA Decay: Comparison of Endpoint and Real-Time Methods , 2000
- *Effect of experimental treatment on housekeeping gene expression: validation by real-time, quantitative RT-PCR , 2000
- *Diverse gene expression pattern during 5-fluorouridine-induced apoptosis. , 2005
- *Expression of prostate specific membrane antigen and three alternatively spliced variants of PSMA in prostate cancer patients , 2003
- *Characterization of nitric oxide production following isolation of rat hepatocytes. , 2000

Co-author:
[thomas d schmittgen](#), [michael j singer](#), [mark a tirmenstein](#), [felicity a nichollsgrzemski](#)

Future work

- Interface
- Functions
- Flexibility
- Other circumstances
- Layout

Q & A

Thank you !

Dynamic Maps in Acemap
