

BACKEND

.NET

WEB



Saxonia Systems
So geht Software.

REST LEVEL 3 WEB APIs MIT ASP.NET CORE

So geht Software.

[@marcuskohnert](#)

sogehsoftware.de/swe/asp-net-core

› Roy Fielding

- › https://www.ics.uci.edu/~fielding/pubs/dissertation/fielding_dissertation.pdf

UNIVERSITY OF CALIFORNIA,
IRVINE

Architectural Styles and the Design of Network-based Software Architectures

DISSERTATION

submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in Information and Computer Science

by

Roy Thomas Fielding



[@fielding](#)

REST

- › Ein Architekturstil
- › Architekturstil des Webs
 - › RESTful HTTP
- › Summe an Einschränkungen für Client Server Kommunikation
- › Richardson Maturity Model
 - › <https://www.crummy.com/writing/speaking/2008-QCon/act3.html>



[@leonardr](#)

RICHARDSON MATURITY MODEL



RICHARDSON MATURITY MODEL

Level 0

Level 0: The Swamp of POX



RICHARDSON MATURITY MODEL

Level 1



RESSOURCEN

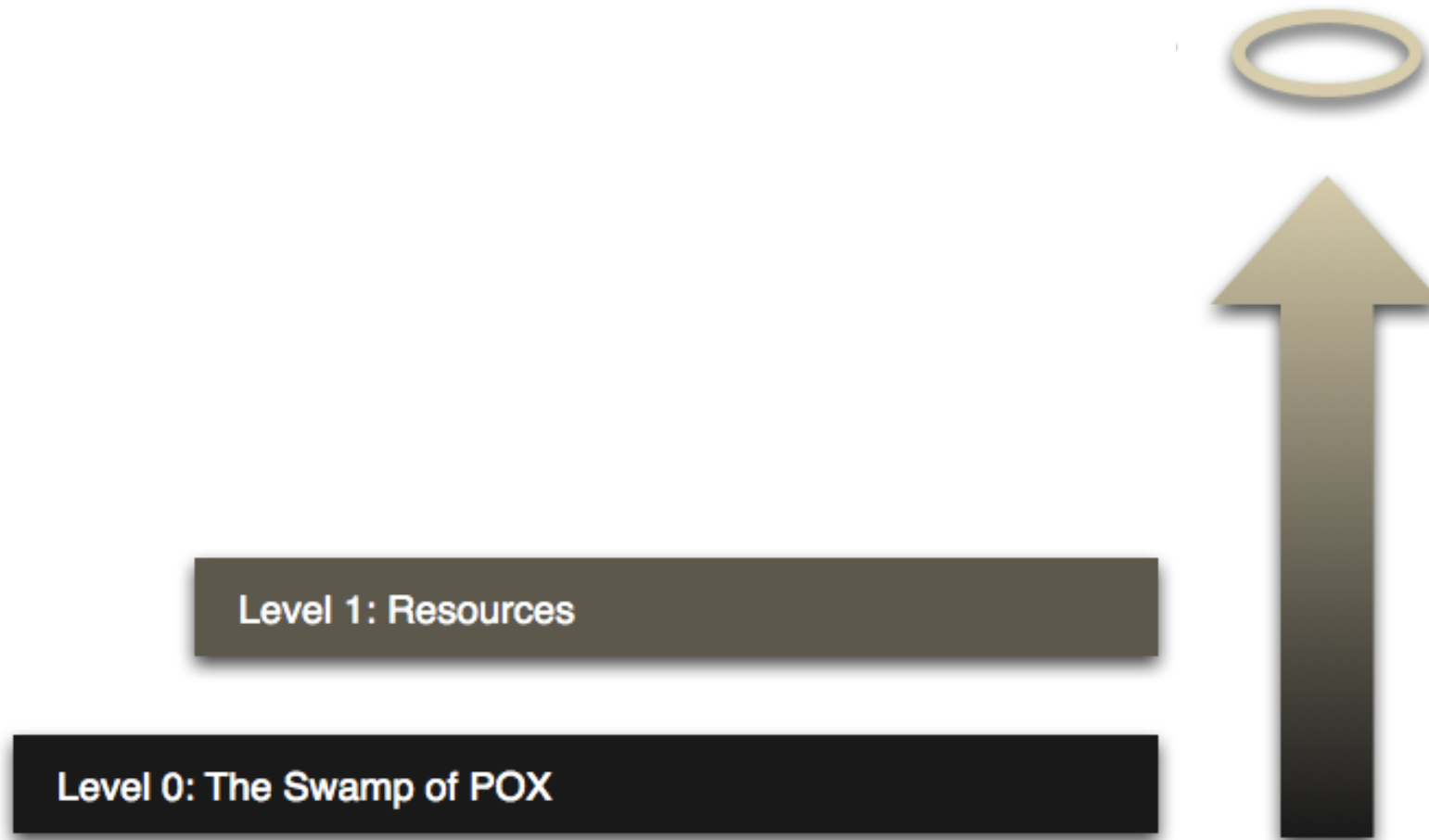
- › Eindeutige Identifikationen von Endpunkten (API)
 - › `http://sample.com/api/repositories`
 - › `http://sample.com/api /repositories/5`
- › URI
 - › <https://tools.ietf.org/html/rfc3986>
- › Client \leftrightarrow Server tauschen Repräsentationen aus
 - › **R**epresentational **S**tate **T**ransfer

REPRÄSENTATIONS FORMATE

- › HTML
- › JPG
- › XML
- › CSV
- › JSON
- › ...

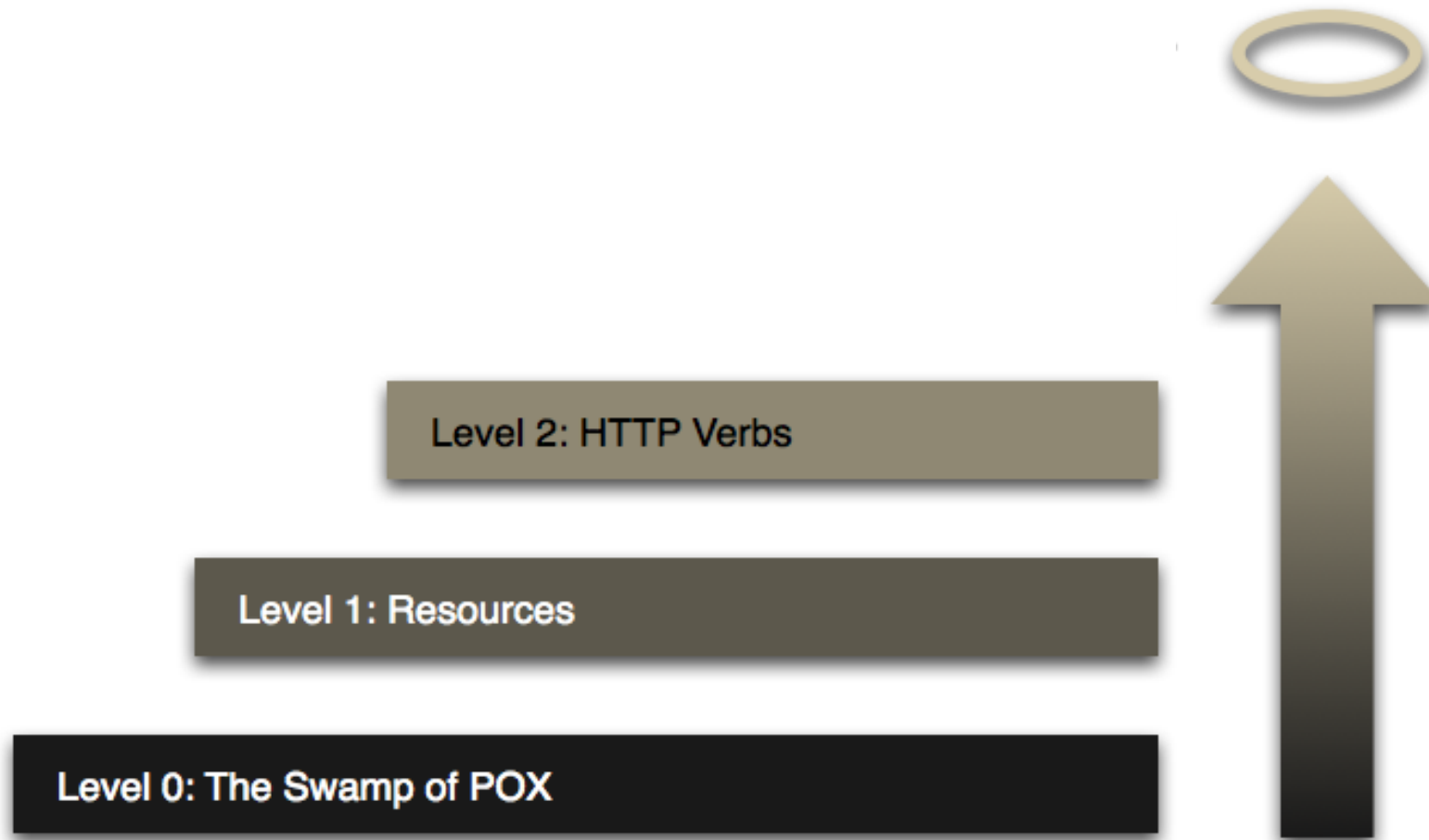
RICHARDSON MATURITY MODEL

Level 1



RICHARDSON MATURITY MODEL

Level 2



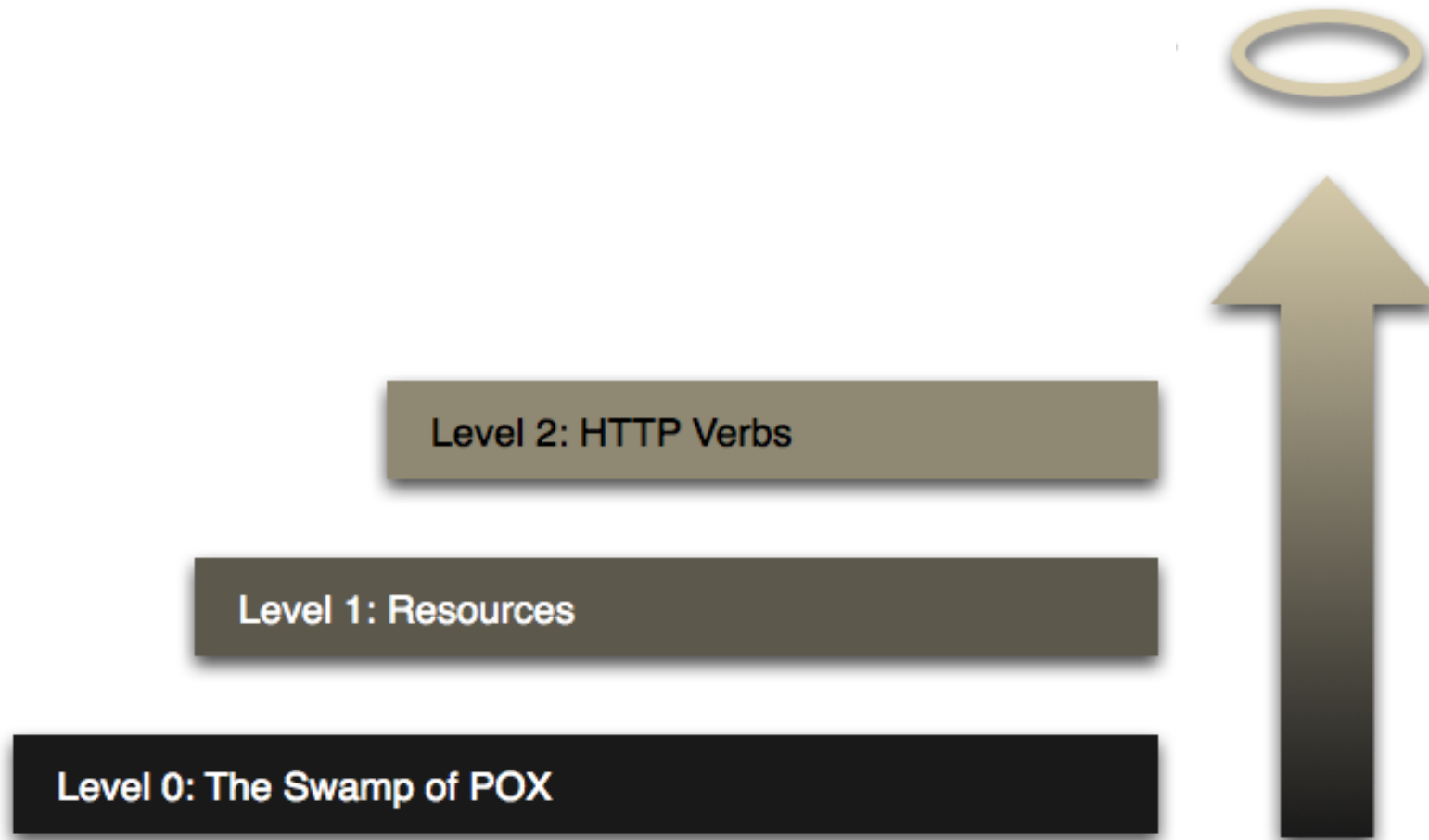
HTTP VERBEN - STANDARD METHODEN

- › feste Anzahl möglicher Methoden
- › SOAP ☢
- › RESTful HTTP
 - › GET
 - › HEAD
 - › POST
 - › PUT
 - › PATCH
 - › DELETE
 - › OPTIONS
 - › TRACE
 - › CONNECT



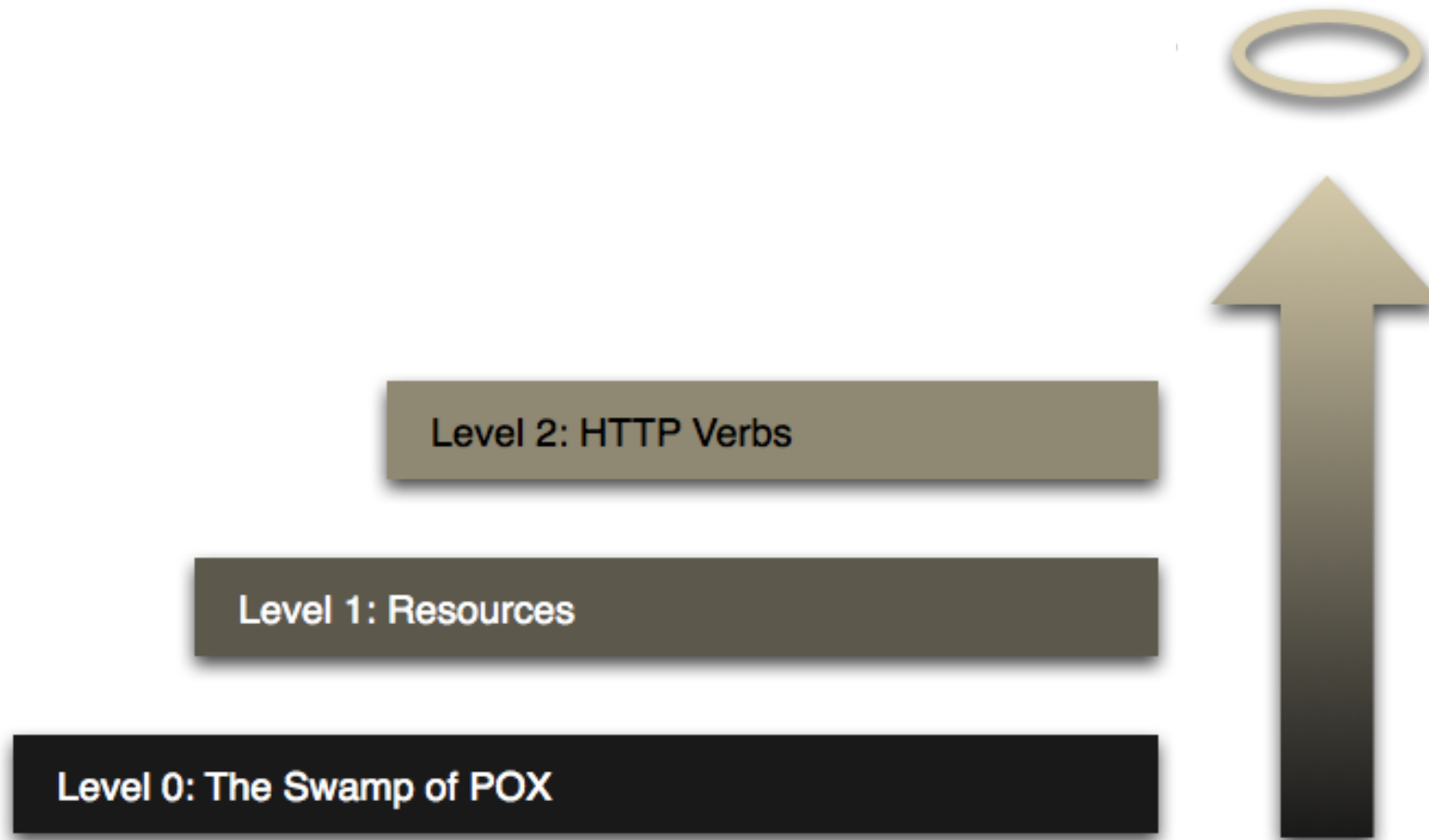
RICHARDSON MATURITY MODEL

Level 2



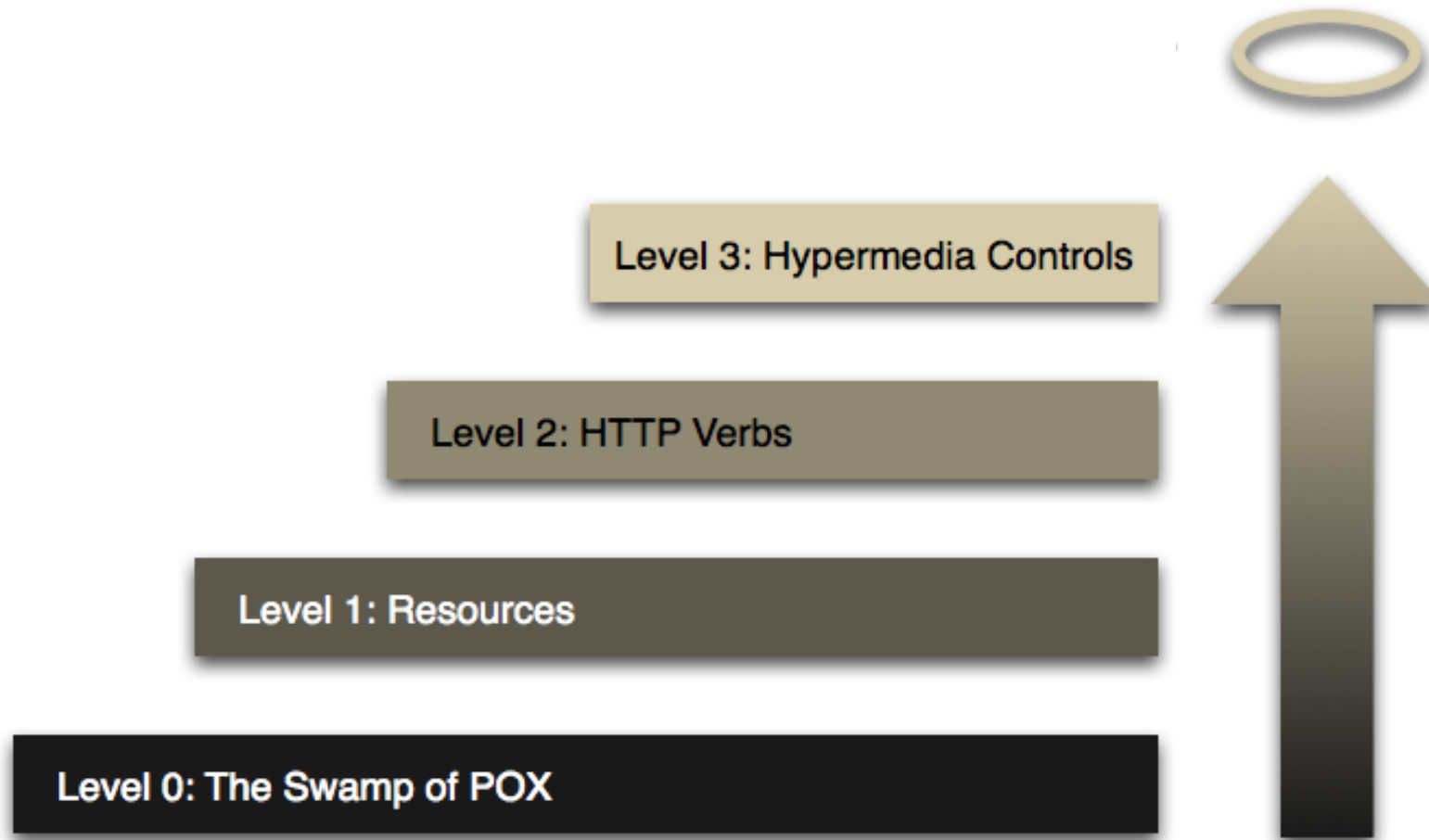
RICHARDSON MATURITY MODEL

Level 2

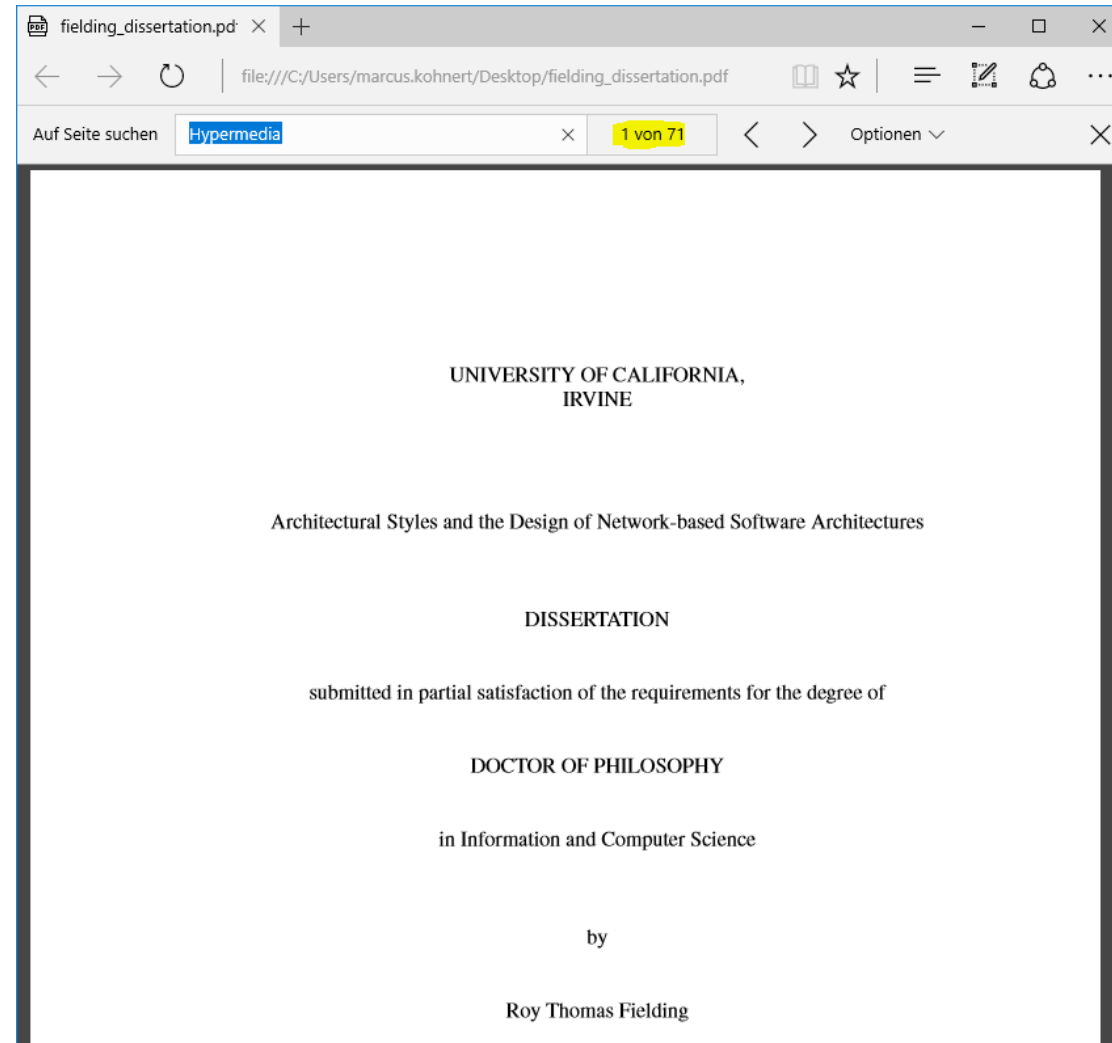


RICHARDSON MATURITY MODEL

Level 3

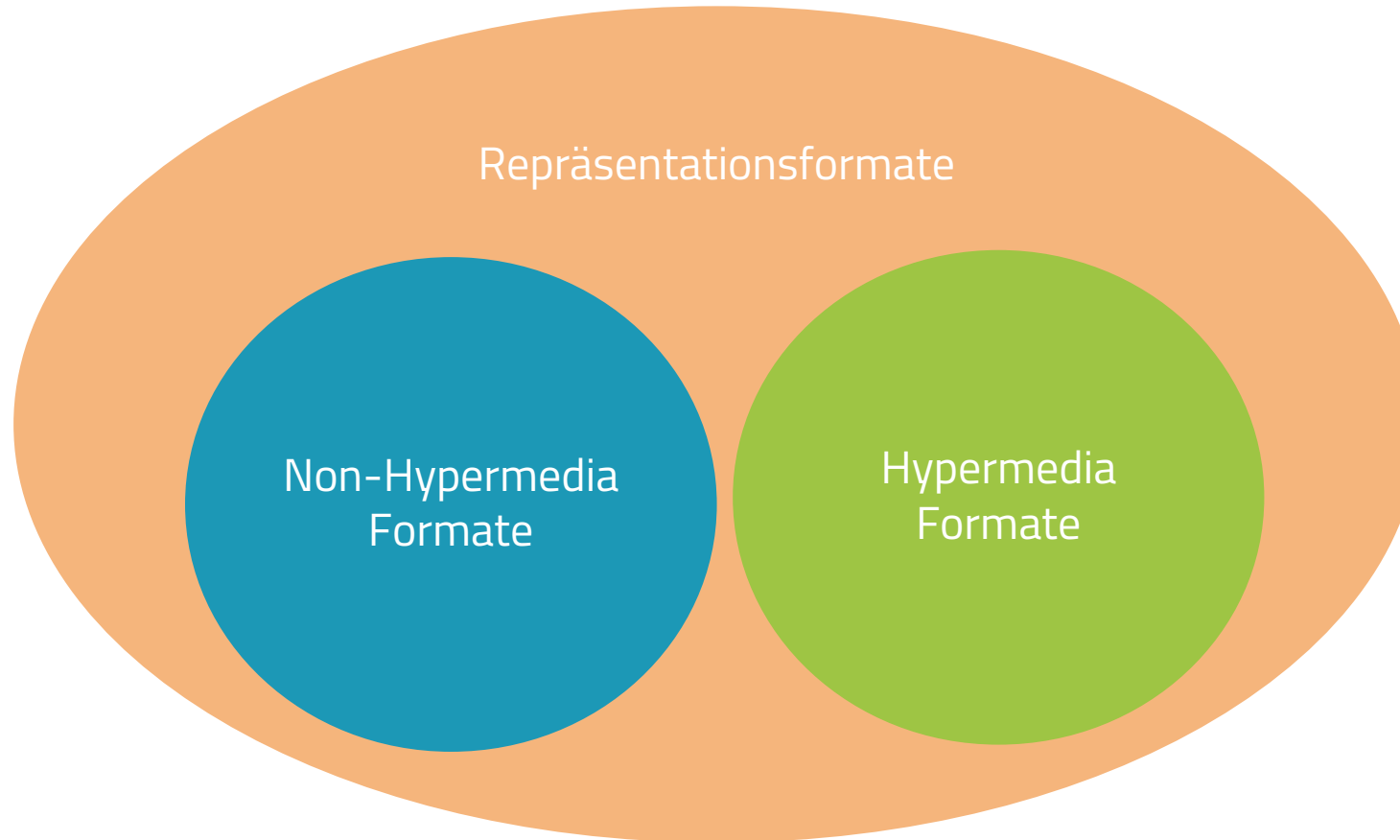


HYPERMEDIA

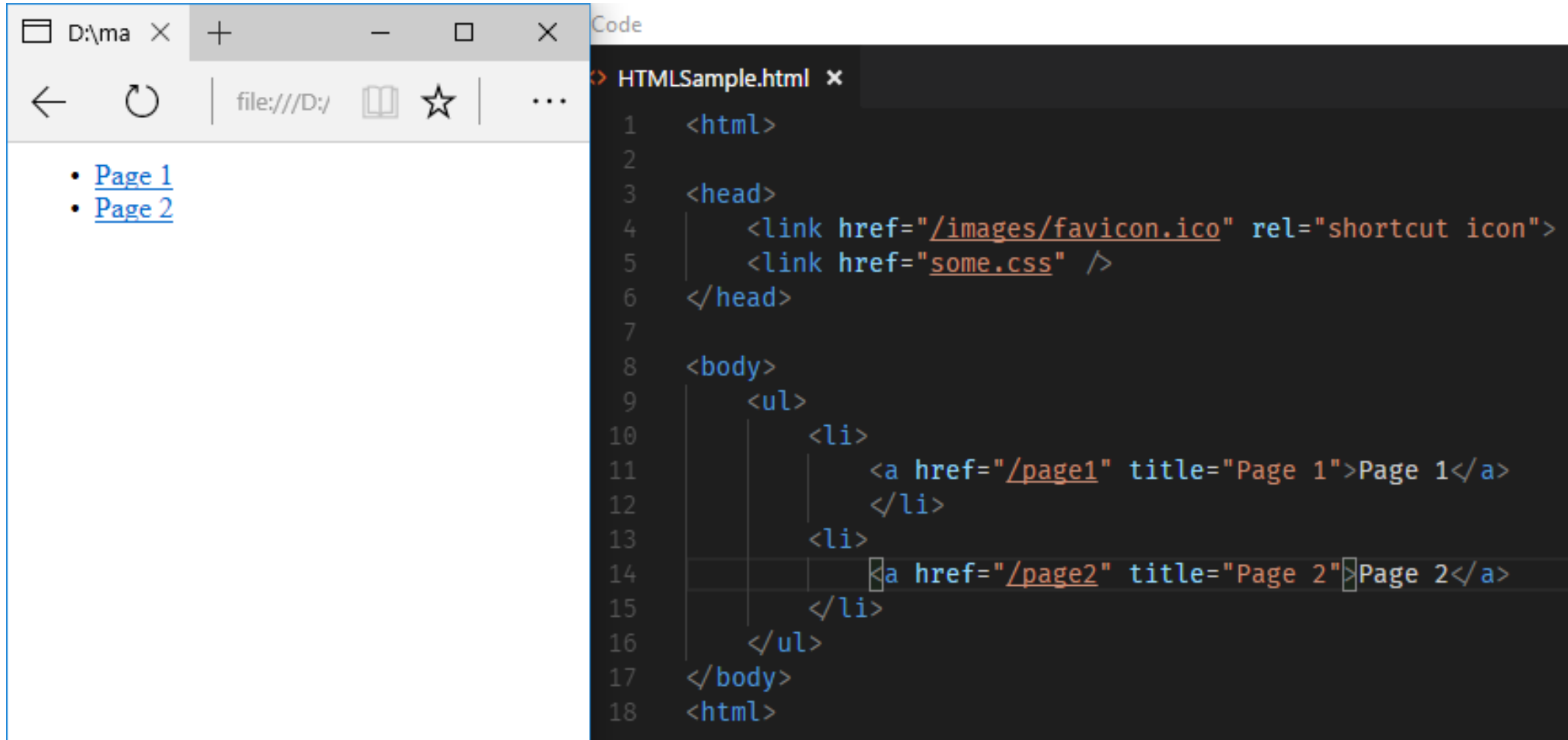


REPRÄSENTATIONS FORMATE

- › HTML
- › JPG
- › XML
- › CSV
- › JSON
- › ...



HTML



The image shows a web browser window on the left and a code editor on the right. The browser window displays a list of links:

- [Page 1](#)
- [Page 2](#)

The code editor shows the HTML code for the file `HTMLSample.html`. The code is as follows:

```
1 <html>
2
3 <head>
4   <link href="/images/favicon.ico" rel="shortcut icon">
5   <link href="some.css" />
6 </head>
7
8 <body>
9   <ul>
10    <li>
11      <a href="/page1" title="Page 1">Page 1</a>
12    </li>
13    <li>
14      <a href="/page2" title="Page 2">Page 2</a>
15    </li>
16  </ul>
17 </body>
18 </html>
```

HYPERMEDIA

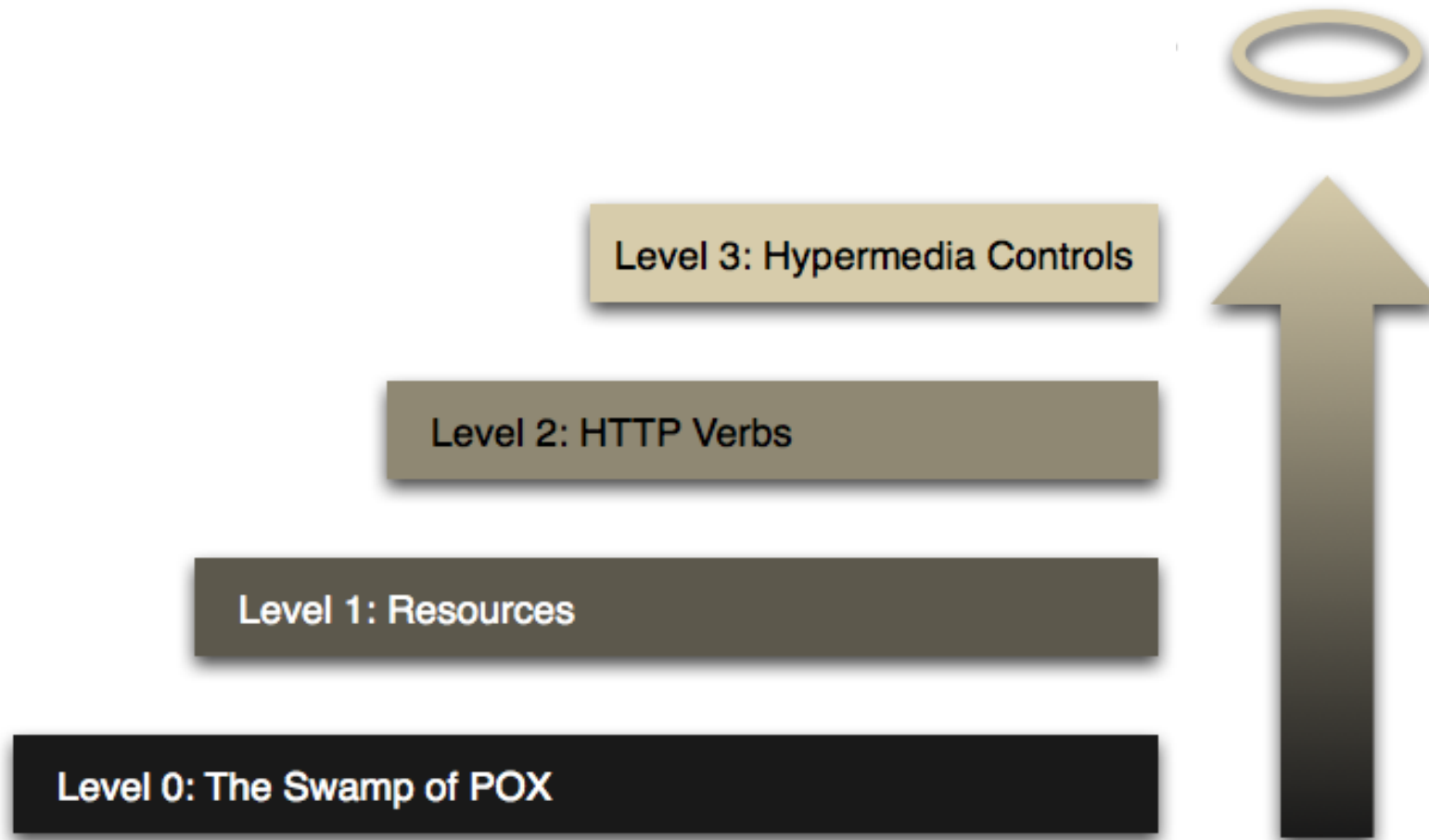
- › Erfolgsgeheimnis des Webs
- › Verlinkung zwischen Ressourcen
 - › Was kann der User als nächstes tun?
- › Hypermedia Formate
 - › HTML
 - › Collection+JSON
 - › SIREN
 - › ...
 - › HAL

HYPertext APPLICATION LANGUAGE

```
1 {  
2   "_links": {  
3     "self": {  
4       "href": "http://localhost:28754/",  
5       "title": "Home"  
6     },  
7     "repositories": {  
8       "href": "http://localhost:28754/repositories",  
9       "title": "Repositories"  
10    },  
11    "users": {  
12      "href": "http://localhost:28754/users",  
13      "title": "Users"  
14    },  
15    "settings": {  
16      "href": "http://localhost:28754/settings",  
17      "title": "Settings"  
18    }  
19  }  
20 }
```

RICHARDSON MATURITY MODEL

Level 3



RICHARDSON MATURITY MODEL

Glory of REST



Level 3: Hypermedia Controls

Level 2: HTTP Verbs

Level 1: Resources

Level 0: The Swamp of POX



GLORY OF REST

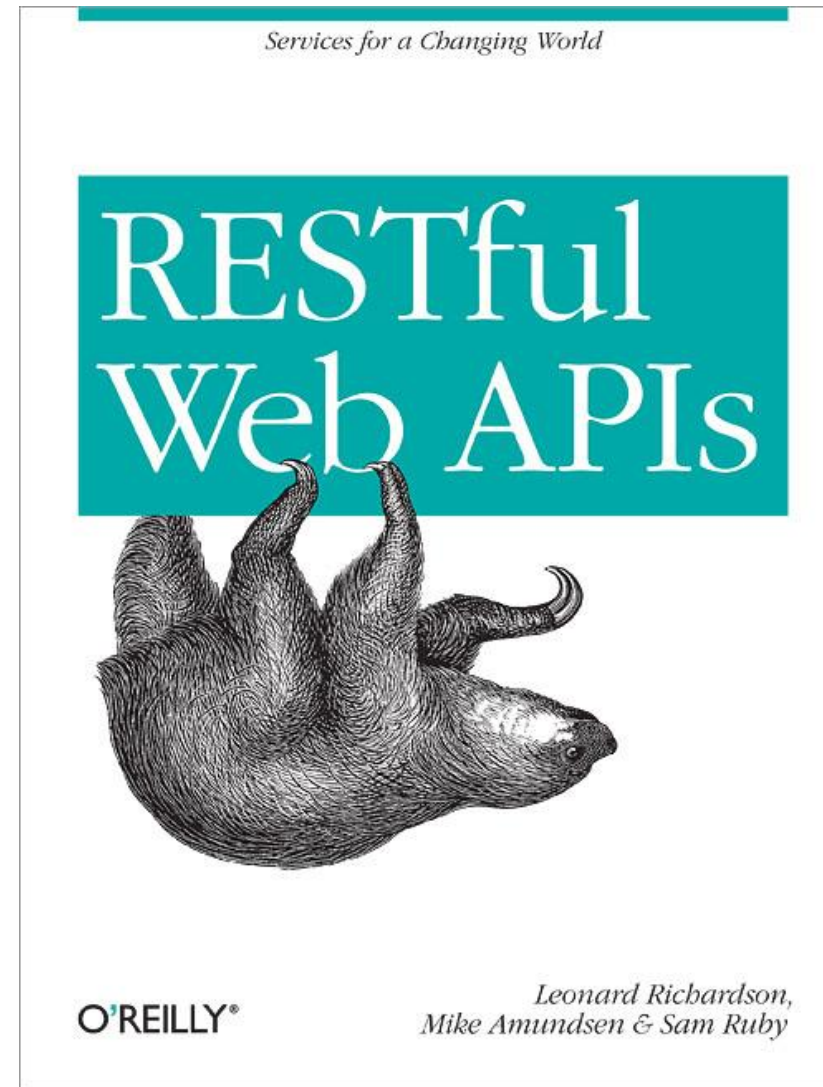
- › Loose Kopplung zwischen Client und Server
- › Nutzung der Erfolgskriterien des Webs
- › Selbstbeschreibendes API



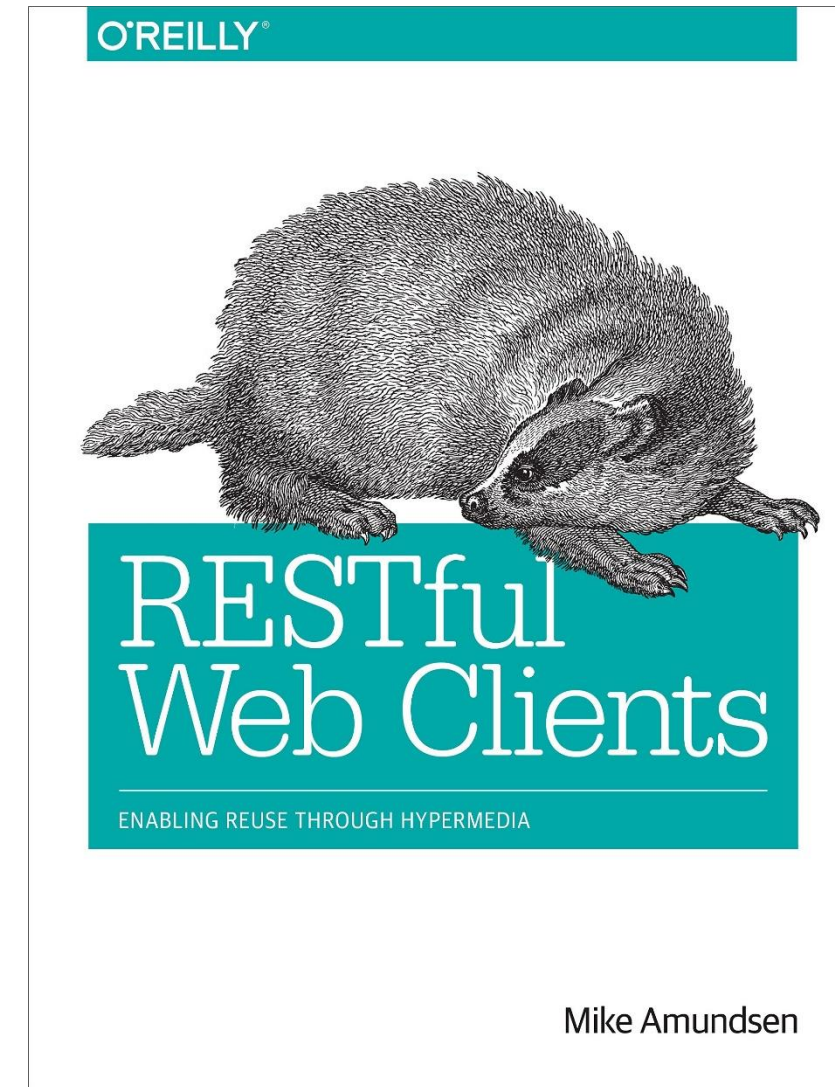
DIG DEEPER



[@stilkov](#)



23



[@mamund](#)

DEMO BEISPIEL

CodeHub

