

# TOKUMEI

## ANONYMOUS SOCIAL NETWORKING MICROBLOGGING

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<https://tokumei.co/>

Prepared for the Guelph Coding Community (GCC)

# THE IMPORTANCE OF ANONYMITY

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# ANONYMITY

DEFINITION: The condition of being anonymous; having no method for personal identification

Anonymity is important for...

- Marginalized groups (LGBTQ+ youth, etc.)
- Activists and whistle-blowers (like Snowden)
- Artists (like Banksy)
- **Anyone**, for any reason (like you!)

# PSEUDONYMITY

DEFINITION: The condition of having a disguised name – a pseudonym

Most services on the web can make use of pseudonymity through:

- Usernames
- Falsely reported identities

However, pseudonyms are not perfect – they are still an identity, even if false

# TRUE ANONYMITY

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True anonymity is achieved when

- The identity of a person cannot be known
- Said person's posts are separated from each other (i.e. they cannot be traced back to the poster)

# BENEFITS OF ANONYMITY

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Anonymity aids in discussion

- **Reduces bias** against content due to preconceived ideas of author
- Allows sharing and discussing things without fear of prosecution
- When information is treated equally, **only the best arguments work**

THIS ONION WON'T MAKE YOU CRY

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# WHAT IS TOR? (A BAD DEFINITION)

Tor is an anonymizing network that

- Routes traffic through three relay servers
  - entrance relay, middle relay, exit relay
  - traffics looks like it's coming from exit relay, can't be traced back\*
- Encrypts all web traffic by design (no need for a CA cert)

See <https://www.torproject.org/about/overview.html.en>



# INTRODUCING TOKUMEI

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# WHAT IS TOKUMEI?

Tokumei (匿名) means “anonymity” in Japanese

- It is an anonymous microblogging platform
- Created by Keefer Rourke and Kyle Farwell
- Runs on Tor, I2P, and in the ‘clearnet’
- It is free/libre open source software (under ISC license)

<https://kfarwell.org/projects/tokumei/git/>



## HOW DOES IT WORK?

Tokumei is server-side software that runs on Unix  
(ex. GNU/Linux, \*BSD, macOS, etc.)

→ runs through 9base or plan9port

It makes use of werc – a sane ‘web anti-framework’

→ see <http://werc.cat-v.org>

Most of the code base is written in `rc`, Plan 9’s shell scripting language

# WHAT THE HECK IS WERC?

werc is a CMS of sorts...

werc just works™

- werc was written by uriel – professional troll and the genius behind <http://cat-v.org>



this guy!

# PLAN 9 FROM OUTER SPACE?

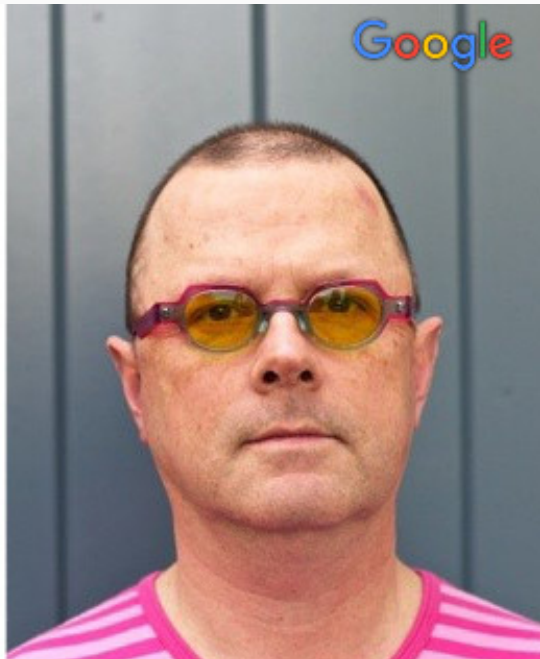
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... Plan 9 from **Bell Labs!**

- Bell Labs created C and UNIX

`rc` was written by Rob Pike, the guy behind Go

## ROB PIKE – BEFORE AND AFTER GOOGLE



# NEAT STUFF, DOES ANYONE KNOW ABOUT IT?

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Currently, there are no active Tokumei servers :(

Service provider liability law is not very good in Canada – this makes hosting potentially challenging

# NEAT STUFF, DOES ANYONE KNOW ABOUT IT?

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There has been substantial interest in Tokumei however!

We've interviewed with the [Social Media Alternatives Project](#) from the University of Utah

<http://www.socialmediaalternatives.org/?p=106>



FEATURES! (DEMO TIME)

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I've set up a demo server over at <https://gcc.harmful.tech>

Feel free to play around!

# INSTALL TOKUMEI

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# SCRIPTED INSTALLATION

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If you have a Debian Jessie server, a registered domain name, and 10 minutes...

We have automated installation scripts for Tor and clearnet configurations

Time for demo two!

- I've spun up a droplet with DigitalOcean (Debian Jessie 8.6)
- Let's install a Tokumei server for access over Tor

# SERVER-SIDE SHENANIGANS

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We chose to use werc on the back-end because

- There's no mucking with SQL or MongoDB
- **Everything is a file**
  - every post is a file
  - tag indices are a file

Modifying, developing, administrating is **easy**

# POST/GET BASED API

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If you hate XML **you'll love Tokumei** ❤️

- Everything you need is plain-text
- Extremely easy to parse data



# POST/GET BASED API

Make a new post

- POST four fields: comment, tags, file, password
- Only the comment field is required

Reply to a post

- POST two fields: comment and 'parent'
- 'Parent' refers to the post number you're replying to
- Both fields are required

# POST/GET BASED API

## EXAMPLE: make a post with cURL

```
curl -d 'comment=First line%0ASecond line' \  
      -d 'tags=firsttag, secondtag' \  
      -d 'file=https://example.com/file.png' \  
      -d 'password=supersecret' \  
      http://example.onion/p/
```

## EXAMPLE: Get all post text tagged with #TOKUMEI using rc

```
for(i in `{curl http://example.onion/_werc/tags/tokumei})  
  curl http://example.onion/p/$i.txt
```

More examples are located at <https://tokumei.co/api>

QUESTIONS?

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# THANKS FOR LISTENING!

Slides and  $\text{\LaTeX}$  sources are available at:

<https://krouke.org/projects/slides/tokumei-gcc>

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These slides use the Beamer Metropolis theme:

<https://github.com/matze/mtheme>