

Pre Meeting - Open Source Lab

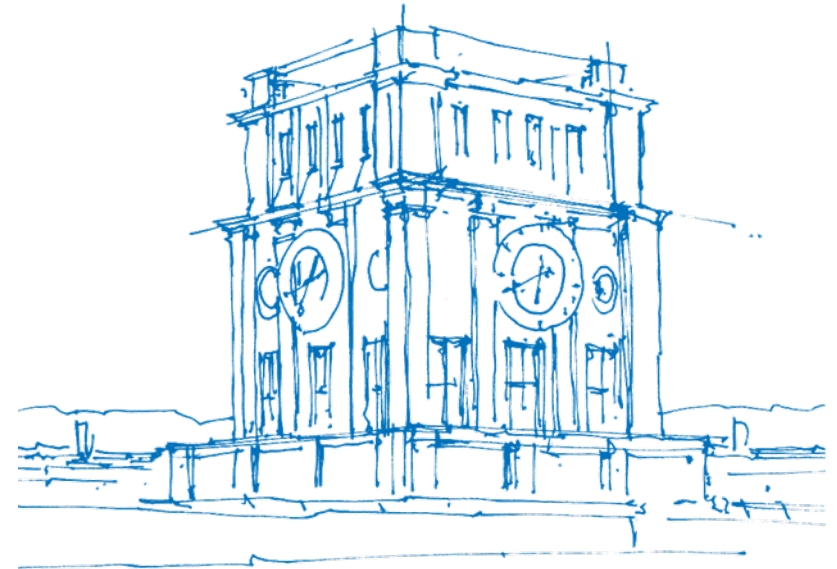
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Technical University of Munich

Department of Informatics

Chair of Connected Mobility

Garching, 02.02.2022



TUM Uhrenturm

Team

Fabian Sauter

- fabian.sauter@in.tum.de
- Master Informatik
- <https://github.com/com8>
- <https://gitlab.com/COM8>
- Popular Programming Languages
 - C++
 - C#
 - C
 - Python
- Misc
 - XMPP Dev
 - Web: <https://uwp.x.org>

Christian Menges

- christian.menges@tum.de
- <https://github.com/Garfield96>
- <https://gitlab.com/Garfield96>
- <https://gitlab.lrz.de/ga87nad>
- Popular Programming Languages
 - C/C++
 - Go
 - Rust
 - Python
 - Ruby

Alexander Stephan

- alexander.stephan@tum.de
- Bachelor Informatik
- <https://github.com/alexanderstephan>
- <https://gitlab.com/alexanderstephan>
- <https://gitlab.lrz.de/alexanderstephan>
- Popular Programming Languages
 - C/C++
 - Go
 - Java
 - TypeScript
 - Haskell

Contact: opensource@cm.in.tum.de

Important Information

- **Website:** <https://www.in.tum.de/cm/teaching/summer-term-2022/open-source-lab/>
- **Registration:** 10.02.–15.02.2022 using matching.in.tum.de
- **Duration:**
 - Weekly theory lectures at the beginning.
 - Later biweekly meetings to check student's practical progress.
 - Time slots will be decided in cooperation with the participants.
 - **All lectures and meetings will be held online (virtual) using BBB, attendance is mandatory!**
- **Module ID:** IN0012 / IN2106 (Bachelor and Master practical course)
- **ECTS:** 10
- **Capacity:** 20 students (Two groups)
- **Language:** English (or German, in case all participants agree)

Interested?

Send a mail to opensourcelab@cm.in.tum.de with a few lines, why you are interested, so we can prefer you in the matching.

No text, just a few lines required! **Mails sent from external mail services get ignored** (exception: exchange students without TUM mail account)

Theory Lectures

The following topics will be covered:

- General introduction
- Git basics
- GitHub, GitLab, ...
- Licenses
- Utilities like Static Analyzer, Linter, etc.
- CI/CD

Requirements for Projects

- Open Source (must be open-contribution)
- No "personal" projects
- Active user base
- At least 10 active users (1000+ recommended)
- The project should be large enough to last you at least a couple of weeks.
- Contributions can be new features, bug fixes or performance improvements (PRs fixing typos are not accepted by us)
- Without previous experience working on extremely large and complex projects, such as GCC, Linux Kernel, Postgres, etc. is not recommended.
- We recommend to pick one of the projects listed below, since these projects are in widespread use and we can help you in case of problems.

Grading

- No final report required, all interesting topics should be described in the documentation of the projects or the corresponding PR.
- LOC not relevant
- Intermediate and final presentation (no fancy slides required)
- Code quality
- Interaction with the community
- Communication with advisors

Note: Spamming or creating other unnecessary burden to the community will result in failing the course immediately. Remember, **you are representing TUM.**

Example Projects - TUM Developers

Die TUM Campus App

Dein Begleiter für den Uni-Alltag



Die TUM Campus App ist der mobile Begleiter für alle Studierenden und Mitarbeitenden der Technischen Universität München. Sie hilft dabei, schnell und einfach an aktuelle Informationen zu kommen und so den Uni-Alltag besser zu organisieren:

- Mensa-Speisepläne
- U-Bahn-Abfahrtszeiten
- Kalender mit Vorlesungsterminen
- Chatrooms
- Suche nach Personen und Räumen
- Noten
- Studiengebühren
- News von der TUM
- Lernräume

Die App ist für alle TUM-Mitglieder gedacht, kann aber auch ohne TUM-Kennung verwendet werden.

eat-api

Forked from srehwald/eat-api
Simple static API for some (student) food places in Munich.

● HTML MIT 🍷 8 ☆ 7 🕒 4 (1 issue needs help) 🛠️ 1
Updated 5 hours ago

CalendarProxy

Proxy for the TUM iCal export to remove clutter

php tum proxy tum-ical-export
📦 1 package ● PHP 📄 GPL-2.0 🍷 8 ☆ 18 🕒 0 🛠️ 3
Updated 6 days ago

RBGreaterAgain

📦 1 package ● PHP 🍷 3 ☆ 5 🕒 7 🛠️ 1 Updated 14 days ago

Top languages

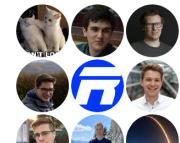
● PHP ● JavaScript
● Kotlin ● HTML
● Ruby

Most used topics

tum students
tum-campus

People

13 >



<https://github.com/TUM-Dev>

Example Projects - BigBlueButton™

- Make it scale: Use multiple nodes for very large meetings
- Allow insertion of empty slides into presentation for sketching
- Integrate insertion of images on the whiteboard
- Enhance audio settings: Allow regulation of audio volume per user
- Replace outdated popcorn.js in video playback

<https://github.com/bigbluebutton/bigbluebutton>

Example Rust Projects

`librsvg` SVG rendering library

Used by Wikimedia project, ffmpeg, ...

Possible tasks:

- implement features of SVG 2.0
- enhance performance

<https://gitlab.gnome.org/GNOME/librsvg>

Example Ruby Projects

Gitlab Possible tasks:

- More than 38,000 issues waiting for you

<https://gitlab.com/gitlab-org/gitlab>

Nokogiri XML, HTTP, SVG, etc. processing library

One of the most used Ruby libraries (in Ruby terminology: gem)

Possible tasks:

- Improve XML Builder

<https://github.com/sparklemotion/nokogiri>

Example C Projects

GNU coreutils Possible tasks:

- Implement parallel shuffle to allow shuffling of huge data sets (30GB+) in an acceptable amount of time
- Improve performance of sort, etc.

libfuse Changes might require modifications in the Linux Kernel

Possible tasks:

- Bug fixes and test cases
- Limit number of created threads
- Modernize sshfs, which is build on top of FUSE

<https://github.com/libfuse/>

Example C++ Projects - CPR

```
#include <cpr/cpr.h>

int main(int argc, char** argv) {
    cpr::Url url{"https://..."};
    cpr::Response r = cpr::Get(url,
    cpr::Authentication{"user", "pass"},
    cpr::Parameters{{"anon", "true"},
                    {"key", "value"}});
    r.status_code; // 200
    r.text; // JSON text string
}
```

C++ Requests: Curl for People

<p>C++17/C++20 support Feature</p> <p>#382 opened on May 20, 2020 by COM8 🔗 CPR 1.7.0</p>	8
<p>Separate host and peer verification for VerifySsl option Feature</p> <p>#310 opened on Apr 14, 2019 by Liastre 🔗 CPR 1.7.0</p>	1
<p>System provided proxy is ignored by setting CURLOPT_PROXY to "" when no proxy is set Bug Feature</p> <p>#300 opened on Nov 30, 2018 by EliSchleifer</p>	1
<p>Please make a NuGet package. That can help add your library to project easier Build Feature</p> <p>#297 opened on Nov 5, 2018 by CODER591</p>	4
<p>Is there a way to get the full URL for a request? Feature</p> <p>Question</p> <p>#270 opened on Apr 29, 2018 by p0fi 🔗 CPR 1.7.0</p>	6
<p>Better Session::SetHeader() implementation Feature</p> <p>#265 opened on Mar 28, 2018 by kaplomat</p>	
<p>compress transfer failed Feature Tests Needed</p> <p>#211 opened on Aug 3, 2017 by guifengcheng</p>	2

<https://github.com/libcpr/cpr>

Previous Projects

- TUM-Dev: eat-api
- TUM Campus App - Android/iOS
- TUM-Live
- Zulip
- Synapse (Matrix-Server)
- Element (Matrix-Client)
- Librsvg
- BigBlueButton
- spot (Spotify client)

Next steps

1. Drop us an email to increase your chance of being matched.
2. Register the course in the matching system.
3. If you are successfully matched to our course, we will send you an email asking for the project/projects you want to work on.
4. Feel free to familiarize yourself with the projects during the semester break.

Contact: opensourcelab@cm.in.tum.de

Remember to use TUM mail address!