

# Exitmap Improvements

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A proposed project under the likely mentorship of Mr. Philipp(phw) submitted to The Tor Project organisation by Deepankar Tyagi in capacity of student/aspirant.

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### 1. Proposed project details:

[Exitmap Improvements](#): (from torproject.org)

Exitmap scans for malicious and misbehaving exit relays, which helps in clients to avoid selecting malicious relays as last hop in their circuit. It supports scanning module such as DNS module, patching check module.

The project's aim is to extend exitmap in following ways:

Make it fully autonomous, emulate user interactions, dynamically explore the web, as unit test.

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### 2. Timeline, deliverables and extended goals.

I plan to devote around 60 hours per week to this project(if this is unacceptable, do let me know I can reprioritize), I have no commitments which can encroach in the time I intend to devote to this project.

The rough timeline is as follows:

April 22 - May 22:

- #1 Grok the papers mentioned at [http://www.cs.kau.se/philwint/spoiled\\_onions/](http://www.cs.kau.se/philwint/spoiled_onions/)
- #2 Get more in depth understanding of tor design (relays, directory descriptors etc)

May 22 - June 21:

- Make Exitmap fully autonomous  
(<https://github.com/NullHypothesis/exitmap/issues/7>)

June 22 - July 15:

- Create module(s) which emulate a user and explore the web dynamically.

July 15 - August 15:

- Write unit tests and if time permits, work on extended goals.

Extended goals:

- #1 Add python3 support
  - #2 Write behavioral and integration tests.
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### 3. Preferred means to submit progress report and suggested frequency of the same

A mail to tor-dev mailing list with highest frequency of per week and lowest frequency of per 2 weeks

The (expected) mentor has also suggested meeting at #tor-dev irc for hour or two.

Many thanks to Mr. Philipp for resolving this and other queries on mailing list [ [thread link](#) ]

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### 4. Prior (relevant) experience

#1 Free software development/example of collaboration with others

My last year(2015) GSoC project, ported Tor and libevent to a new platform (NaCl, a C/C++ sandbox on Google Chrome). Full details about the same can be seen at <https://deepankar.io/gsoc>.

Libevent was merged to official ports ( <https://codereview.chromium.org/1503493002/> , <https://codereview.chromium.org/1311703003/> )

Later, Krotor which resulted because of this project involved collaboration with puranjay( designed GUI). For details visit <https://deepankar.io/krotor>.

Apart from this there couple of more projects which involved upto 4 people, few of them are listed at <https://deepankar.io> and <https://github.com/codebuff>

## #2 Code Example(s)

Python:

#1 <https://github.com/codebuff/spelling-correction> (details: [https://deepankar.io/experiments/details/spelling\\_correction](https://deepankar.io/experiments/details/spelling_correction) )

#2 <https://github.com/codebuff/sentiment-analysis> (details: [https://deepankar.io/previous\\_projects/details/sentiment\\_analysis](https://deepankar.io/previous_projects/details/sentiment_analysis) )

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## 5. Motivation

### #1 To work with this organization

I felt the pangs of internet censorship when our university deployed fortinet/opendns and one day I found even some of news website were also blocked. This motivated me to look for ways to bypass this, of all the methods tried Tor was the most reliable. Which further propelled me learn more about tor and contribute in any manner as possible, my last year GSoC project was small step in that direction.

### #2 To work on this project

This project involves a cause that I care about and is also of academic interest as student of computer science (algorithms improvements, automation, writing test, research paper etc.)

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## 6. Academic and contact details (Irc details)

Final Year student of Computer Science at undergraduate level( B.TECH) at NIIT University.

Resume available at <https://deepankar.io/resume>

Contact details at <https://deepankar.io/contact> or  
deepankar . tyagi @ st . niituniversity . in

On IRC if username available, will be hanging out as codebuff

## 7. Other Comments

#1 Apart from maintaining language compatibility and library(ies) compatibility, I don't

foresee any other maintenance work, however if anything comes up I fully intend to stick around for this or other projects

#2 I am applying to one other projects, the priority of that project will likely be lower than this one.