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Name *

Shivam Singhal

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Current School *

Northern India Engineering College (Guru Gobind Singh Indraprastha University)

What project are you proposing *

Hybrid Blockchain
(https://github.com/openmainframeproject/tsc/blob/master/proposed_projects/HybridBlockchain.md)

Why would you like to execute on this particular project and why would you be the best individual to do so.

I would like to execute on this project because blockchain is the technology innovation which provide an enhanced level of security, increasing the security of the system from hacking and fraud, provides an easy mechanism to allow users to securely transfer the assets between parties and facilitates easy audit of user accounts, provides privacy and flexibilty to being open or private.

I believe I am best suited for this as I have experience with working Javascript and ReactJS from a while and contributing to various upstream projects liked addons.mozilla.org (Mozilla Official Site to list firefox addons) project with more than 20 Millions Monthly Active Users. Apart from that I have experience with developing browser extensions and plugins and contributing to Mozilla Webextensions from a while. Also I am quick with learning new technologies to work upon and have experience working with huge code bases like Gecko (project with more than six hundred Thousand commits) (the rendering engine behind Firefox.). Snapshot of my commits - https://github.com/mozilla/gecko-dev/commits?author=championshuttler.

Please share details of your academic, industry and/or open source development experience, as well as other details as you see fit. *

Academic:

Currently I am junior year Computer Science bachelor student in Guru Gobind Singh Indraprastha University.
Industrial Experience:

I worked with 2 companies as Software Developer `dadpreneur.in`(dormant) and codeStreet.io in summers of 2017 and 2018 respectively responsible for Building a stand-alone single page application, Worked on making the Recruit product GDPR compliant.Built auth as a microservice using NodeJS, Mongo, and PassportJS. From the 2018 winters I am volunteering with local Hackathon Community Hackdelhi.in as software developer to manage their website and backend registration and review portal for the hackathon.

Open Source Experience:
I am collaborator of webextensions.tech - A scaffolding UI tool for browser extensions. It lets you to input and select few parameters and outputs a complete boilerplate browser extension project. Also available as npm package at https://www.npmjs.com/package/create-web-ext/.
This is also featured in MDN
https://developer.mozilla.org/docs/Mozilla/Add-ons/WebExtensions/Development_Tools
I am a Mozilla volunteer for more than 2 years and contribute to various projects as Devtools, addons.mozilla.org, SpiderMonkey and few others.
I also am part of Mozilla India Community, I organise regional monthly meetups and mentor newbies in contributing to Mozilla and open source in general.
I am Mozilla Representative https://reps.mozilla.org/u/championshuttler/
I was featured in Mozilla blog for my contributions and named as `Addons' Friend`
https://blog.mozilla.org/addons/2019/01/21/friend-of-add-ons-shivam-singhal/

Rest about my work is described at championshuttler.com and my blog lives at
https://championshuttler.wordpress.com/

Have you worked on other Open Source projects? If so, list them. Otherwise, just say 'No'

Yes I am working with various open source projects majorly of Mozilla. I am listing few of them here:
a) I am making the UI better with ReactJS and writing python based API's for
addons.mozilla.org (Mozilla's official site for developers to list add-ons). Code lives at

http://github.com/mozilla/addons-frontend/ for the frontend and
http://github.com/mozilla/addons-server/ for the backend.
b) Fixing Native JavaScript bugs of Gecko - browser rendering engine behind Firefox,
Thunderbird and many other products. Code lives at https://github.com/mozilla/gecko-dev/
c) Sending patches to SpiderMonkey - Mozilla's JavaScript engine written in C and C++.
d) Enhancing Webextensions API for Firefox - a cross-browser system for developing
extensions to customize the browser experience.
e) Enhancing UI for hackable debugger for modern times, built from the ground up using React
and Redux. Code lives at https://github.com/firefox-devtools/debugger
f) Maintaining the firefox addon to Snapshot of all the permissions used by each installed
extension https://addons.mozilla.org/firefox/addon/permission-inspector/ . Rest of my addons
are listed at https://addons.mozilla.org/firefox/user/12610919/

My open source work mostly listed at github.com/championshuttler and
https://phabricator.services.mozilla.com/p/championshuttler/

Describe your development methodology

The working methodology for each week mostly includes, working on the task pre decided with
the mentor and reporting the updates every weekend, via meeting (Video, audio, or text). The
same schedule will be followed for the first few weeks, aiming for the completion of the project
and the later weeks will be dedicated for Debugging, Testing and Documentation.
The following is a detailed timeline of the tasks I believe I will need to complete in order to
prepare for and complete this internship.

This is an approximate timeline based off of my current understanding of the project and
involved repositories, so it may reflect some lack of, or misinformation about project.

Pre-internship period
* Learn more about current workflow.
* Gain a more in-depth understanding of the code.
* Improve my skills as needed.

First 3 weeks
* Learn more about workflow.
* Getting familiar with existing code.
* Discuss prototypes of several features
* Write 2 blog about the experience so far with project and progress.

**Week 4 and 5 **
* Working on prototyping for the discussed features.
* Take feedback about the suggestions from Mentor.
* Extend the architecture and consensus model of Fabric
* Write 2 blog about the experience so far with project and progress.

**Week 6 **
* Submit initial code for the feature.
* Changes according to the review.
* Write blog about the experience and progress so far.

**Week 7 **
* Take feedback about initial code for the feature.
* Make changes as per suggestions of Mentor.
* Write blog about the experience and progress so far.

Week 8
* Write tests for the features.
* Make documentation of the implemented features.
* Submit code sample.
* Write blog about the experience and progress so far.

Week 9
* Buffer week.
* Continue with Testing and debugging.

Week 10
* Write internship report and a blog about it.
* Continue working on small bugs.
* Discuss with mentor about how can i contribute after the internship period.

About Hybrid Blockchain:

What is blockchain:
At its most basic level, blockchain is literally just a chain of blocks, but not in the traditional sense of those words. When we say the words "block" and "chain" in this context, we are actually talking about digital information (the "block") stored in a public database (the "chain").
"Blocks" on the blockchain are made up of digital pieces of information. Specifically, they have three parts:

1. Blocks store information about transactions, say the date, time, and dollar amount of your most recent purchase.
2. Blocks store information about who is participating in transactions. A block for your splurge purchase would record your name along with the place you bought. Instead of using your actual name, your purchase is recorded without any identifying information using a unique "digital signature," sort of like a username.
3. Blocks store information that distinguishes them from other blocks. Much like you and I have names to distinguish us from one another, each block stores a unique code called a "hash" that allows us to tell it apart from every other block.

Blockchains are gaining popularity for their applications in both public and private enterprise.

Hybrid Blockchains lie somewhere between private and public blockchains, depending on their architecture. Therefore, to get a good understanding of hybrid blockchains, one must first understand the differences between private and public blockchains. As the name suggests, public blockchains are accessible to and managed by the public. Anyone can participate in the maintenance and governance of the blockchain. The most popular blockchain in the world, Bitcoin, is a public blockchain. Private blockchains are much faster than public blockchains because the network is managed by a handful for trusted nodes whose motives are clearly for the benefit of the network. Such trusted nodes typically belong to financial institutions or universities to maintain fairness and remain unbiased.

List two references that we could contact to learn more about you. *
Trishul Goel - trishulgoel@gmail.com - Frontend Developer @ Cliqz
Nikhil Chawla - nichawla@redhat.com - Software Engineer @ Red Hat