

1. What project would you like to work on and why?

Project : Design and Implementation of a new source video from mobile phone (Android)

Motivation : This project gives me opportunity to pursue two of my main interest ie Android and Computer Networks, hone these skills further and give back to the open source community at the same time.

2. Propose an idea of how are you going to develop the project. Please,try to give as much information about this topic in your proposal, for example, milestones, time scheduling, deliverables, etc.

2.1 Implementation

2.1.1 : GUI

- Theme will be along the guidelines of Material design,
- Appcompat v7 will be used to make the gui backward compatible with all of the previous versions of android.

2.1.2 : **Getting video stream (from device)**

- One idea is to pass control to the device's default camera app (via android intents) and use its stream and we will use the device's camera to its full potential with app service running in background.
- Other idea is to use "MediaRecorder" class , which will be a sub activity in the app.
- Currently I am in favour of using android video capture intent.(one of the biggest advantage of using this method is that the user can control the resolution of video according to the bandwidth availability).

2.1.3 : **Sending stream to server:**

- 'Put' Method will be used to send chunks of video to (icecast) server.
- Emphasis will be to create a restful api, which can help the server and app to communicate in a scalable manner.
- One of the following two libraries will be utilized for any network related task (such as creating sockets etc)
 - Android ION : <http://www.koushikdutta.com/post/ion> (higher level tasks) or
 - Android Async : <http://www.koushikdutta.com/AndroidAsync> (lower level tasks)

2.1.4 : **Suggestion(s):**

- We can extend this to screen sharing in a particular use case scenario, a teacher can teach a class in real time by scribbling on the touch screen (however there is a catch to it, without root privileges, there is no easy way to do it.)

2.1.5 : **Various :**

- Initially only devices with android ver ≥ 4.0 will be targeted (as they already occupy more than 80% of market share and can handle tasks required in this project in better way.
- LibVLC will be used for the testing purposes (ie playing the stream)

2.2 : Deliverables/Milestones :

2.2.1 : Midterm (by July 3) : 90% of GUI implementation (where other 10% involves fixing small quirks like making it compatible with different screen sizes, changing color scheme, adding a button or two etc).Complete implementation of getting stream from device.

2.2.2 : By August 01 : The app will be able to send chunks of streams to a remote server.(At this stage finer details like network latency in networks will de-prioritized, rather more preference will be given to other aspects such as stability,battery(cpu) consumption etc)

2.2.3 : By August 25 : Along with further polished gui, added stability,the app will be able to send stream to remote server with network latency taken into account.

2.3 Time Scheduling : Please refer to section 5.

3. Tell us about your experiences in free software development. Point us to a code sample: something good and clean to demonstrate that you know what you're doing, ideally from an existing project. Please, include your contributions in GitHub, Launchpad, Google Code, etc.

- Over the span of 2.5 years I have worked on 10+ project, to get info about all of them, please visit <https://codebuff.net>.
 - Unfortunately I have never submitted patch to any existing major open source project, however I have worked on open source projects such as android kernel,moodle,Vuze etc.
 - Except two of my projects, all other are open sourced.
 - **Previous experience related to this project : (please visit the links to see the detailed info,demo videos,screenshots etc.**
 - Android :: Intentio : https://codebuff.net/current_projects/details/intentio
 - ComputerNetworks :: Direct Transfer https://codebuff.net/past_projects/details/direct_transfer
 - Restful API,authenticated communication between server and app, interaction between app and server etc.(I also developed android app and web portal) :: My last summer internship as Research Assistant at School of Information Systems,SMU, Singapore.(I cannot divulge any further information, however if you need any reference, I am willing to provide details of contact info of mentors)
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4. Why do you want to work with P2PSP Project in particular?

- Currently video transfer accounts for major chunk of bandwidth, with youtube at the helm of it, any application which relies on video transfer for its core competency is not highly scalable due to the fact that video occupy huge chunk of bandwidth.

- When I found out that people at p2psp.org are working in direction to solve this problem,I naturally got inclined to work with them.
 - The real time streaming of multimedia made it even more appealing.
 - I do know that p2psp is defined as “The P2PSP is an application layer protocol for the real-time streaming of multimedia content over the Internet”, but I want to work with p2psp due to “live” , “high scalability” of the protocol and as I already mentioned(in section 1) “android” and “computer networks”.
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5. Will you be working full-time on the project for the summer, or will you have other commitments too (a second job, classes, etc)?

Yes, I will be working full time, (I do not plan to even apply for any internship this summer, I am in my sixth semester and in out eight semester we anyway have to work in industry) However for part of gsoc coding period I will have other commitments.

- May 15-28 : semester exams (so will be unable to work on may 25-28).
- August 03 – August 28 : My seventh semester will start on August 03, however this semester will be much lighter as compared to current one, I am sure I can manage to squeeze in 6 hours on week days, and 14 hours on weekends.

So my schedule will look like this.

- Current – May 10 : 4-8 hours on weekends, to brush up on the concepts and building wireframes, understanding p2psp protocol in details.
 - May 15 – May 28 : Will not be able to devote any time to the project.
 - May 29 - August 03 : Avg 10 hours per day including weekends
 - August 03 - August 28 : 6 hrs per day on weekdays, close to 14 hrs on weekends
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6. What is your ideal approach to keeping us informed of your progress, problems, and questions over the course of the project?

- I plan to write blog (with max frequency of per week and minimum frequency of per 2 weeks) and send the synopsis of same blog post to mailing list every two weeks.
 - Regarding questions I plan to post them to mailing list,however I have been corresponding with mentors assigned to this project and I think it is better If I also have the option to contact them directly. Mentors details can be found on this.
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7. How can we contact you to ask you further questions?

Emails : deepankar.tyagi@st.niituniversity.in, deepankar7tyagi@gmail.com, nonfatalist@gmail.com [I am subscribed to mailing list with this mail, also this one is attached to my launchpad id ie codebuff]

Ph no +91-9784673770

For any further details please visit <https://codebuff.net> .

8. What school are you attending? What year are you, and what's your major/degree/focus? If you're part of a research group, which one?

University : NIIT University, Rajashtan, India

Degree : Bachelor of Technology [B.Tech] (pre-final year/third year)

Major : Computer Science and Engineering.

I am currently member of team working on a research paper on topic : security in cloud computing.

For any more details please visit : <https://codebuff.net/resume>