

# Sumit Singh

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EDUCATION      Highest Degree: Masters in CSE, IIT Kanpur.

CURRENT WORK      *Software Engineer on Android Platform - Directi*  
Time: Feb 14 onwards.  
Product: Tring - voip client.

- worked in Java, JNI, C, XML with emphasis on good code design.
- developed initial prototype alone using pjsip.
- worked in a team of 2 for initial 10 months.
- a significant amount of time was invested to ensure quality and specifically echo.
- we ended up experimenting with lot of voice/media stacks with some tweaks of our own.
- experimented with continuous build system and analytics.
- currently we send lot of RTCP stats and user feedback to narrow down and detect possible issues.
- for an earlier version of the app, we wrote functional tests that used to test proper call flow and voice flow (no quality test).
- switched from IntelliJ + Ant to Android Studio + Gradle.

*Software Engineer on Android Platform - Directi*  
Time: Sep 13 - Jan 14.  
Product: talk.to (chatting client).

- Languages: Java, XML, (occasional Python scripts).
- Tools: Ant, Android Performance tools (e.g. monitor), Java profiler (YJP).
- Test: Unit testing(junit) and functional testing (android specific).
- great insights into some of the aspects - like reasons for low user onboarding(successful signup) rate, why pivoting the product (did twice when I was there).

*Training project at Directi*  
Time: Jul 13 - Sep 13. Product: similar to twitter - web client and server.

- Languages: Java, Javascript.
- Build Tool: Maven.
- Database: PostgreSQL, Redis.
- Other: Java Spring MVC framework, Apache http server.

SELECTED RESEARCH WORK      Sumit Singh and Shashank K Mehta, "*An Improved Approximation ratio for Prize Collecting Steiner Forest Problem in Node Weighted Planar Graphs*", part of M.Tech thesis.

Pawan Aurora, Sumit Singh and Shashank K Mehta, "*Partial Degree Bounded Edge Packing Problem with Arbitrary bounds*", Proceedings of FAW-AAIM, Lecture Notes in Computer Science, vol 7924, pp 24-35, 2013.

Sumit Singh, "*A Local Approach for Identifying Clusters in Networks.*", arxiv:1203.4685, 2012.

Sumit Singh and Ayushi Garg, "*Towards The Adaptive Questionnaire Generation Using Soft Computing*", Proceedings of NaBIC, pp 806-811, 2009.

M. TECH THESIS      The thesis was in the area of approximation algorithms under the guidance of Prof. Shashank K Mehta. We mostly worked on upper bounds for mainly graph based problems. We were able to improve the state of the art in the two of the three problems that we looked at (at the time of thesis defence).

ACADEMIC POSITIONS OF RESPONSIBILITY	Teaching Assistant for Algorithms II (Jan 12 - May 12). Teaching Assistant for Randomized Algorithms (July 11 - Dec 11). Teaching Assistant for C Programming Lab (July 10 - May 11).
CONFERENCE/ SCHOOLS ATTENDED	Summer School on Distributed Algorithms, Systems and Programming, conducted by Microsoft Research and IISC, Bangalore in 2012. Attended a short course on software architecture by Prof. Philip Dugerdil in 2012. NaBiC 2009 - conference on soft computing. ICMCM 2009 - conference on mathematical models.
INTEREST & HOBBIES	playing snooker and basketball. listening music. trekking.