

Microsoft Research Technical Report

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## **Appendix to Nalanda: A Large-Scale Socio-Technical Graph of Entities and Relationships in Software Development Environment**

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This technical report includes supplemental materials for the paper “Nalanda: A Large-Scale Socio-Technical Graph of Entities and Relationships in Software Development Environment”.

# Survey Instrument Microsoft Research Survey on Newsfeeds in Software Development

## Survey Flow

EmbeddedData

SourceValue will be set from Panel or URL.

Standard: Consent (6 Questions)

Branch: New Branch

If

If Do you understand and consent to these terms? No thanks, I do not want to do this survey

Is Selected

EndSurvey: Advanced

Standard: Survey Section 1: Codebook feedback (10 Questions)

Standard: Survey Section 2: General questions Newsfeeds (8 Questions)

Standard: Survey Section 3: Information pain points (3 Questions)

Standard: Survey Section 4: Additional Ques ( Demographics + WFH) (6 Questions)

Page Break

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## Start of Block: Consent

Q1

### **Microsoft** Research Survey on Newsfeeds in Software Development

The Software Analysis and Intelligence (SAINTES) Group in MSR is working on understanding the day-to-day pain points associated with software development, specifically w.r.t. information/activity discovery. **We need your help!** Software developers are constantly inundated with information/activity overload. This study is a first step towards understanding the efficacy of news-feed based solutions in solving that problem and integrating the solutions into the tools used by the developers (e.g., Visual studio, Azure DevOps, etc.). Please read and accept the consent form below, if you are willing to participate.

The survey should only take about 10 minutes to complete. The data in this study is **collected anonymously**. Analysis and the conclusions of the study will be shared in aggregate form only, ensuring no impact on the study participant. The anonymous data will be shared with the researchers at Microsoft Research who will process and analyze it. The findings from aggregated data may be used for publications. We selected you as part of a sample of Microsoft employees based on your job role. By responding to this survey, you agree that you (1) are at least 18 years of age, (2) are participating voluntarily in this survey, and (3) understand you can withdraw from the survey at any time.

We hope you enjoy filling out this survey.

Thank you for participating!

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CONSENT STATEMENT REMOVED.

### Q4 Do you understand and consent to these terms?

- ☐ Yes, I agree.
- ☐ No thanks, I do not want to do this survey

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*Display This Question:*

*If Q4 = Yes, I agree.*

Q5 Which option from below would most closely reflect your job role?

- ☐ Individual Contributors (SDE, Senior Software Engineer etc.)
- ☐ Managers/Lead (Software Engineering Manager, Software Engineering Lead etc.)

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*Display This Question:*

*If Q4 = Yes, I agree.*

Q6 What is your career stage?

- ☐ Level 1 (e.g. Software Engineer, Program Manager)
- ☐ Level 2 (e.g. Software Engineer 2, Program Manager II)
- ☐ Senior
- ☐ Principal or above.

End of Block: Consent

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Start of Block: Survey Section 1: Codebook feedback

Q7

**All questions are optional, but please respond to as many questions as possible.**

**Please do not include any personal information in your responses. Do not include your name or other people's names.**

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Q8

**Section 1: Codebook feedback:** Please go through your profile on [Codebook](#) and profiles of your top collaborators. [In case your Codebook profile is empty, you can use the search functionality to view profile for other developers.] This section will collect your feedback about the Codebook platform.

[Visit your Codebook profile](#) now and then return to the survey.

Representative Codebook profile for a dummy user Andy Smith :

CodeBook

Search for an alias

Help Sign out

AS

Andy Smith (andmith)

SENIOR SOFTWARE ENGINEER

LANGUAGES : C#, JAVASCRIPT, POWERSHELL, SQL, BOO >>

Your repositories

Platform-Hub

Hub-Main

Hub-DeviceRegistrationService

Your recent active pull requests

Scale out prod service

6/22/2021

Fix timer intervals to match with ...

4/29/2021

Shared identity support for docu...

2/6/2021

More >

Your recent active workitems

Implement shared identity for docu...

7/30/2021

One

Your recent code review requests

Log warning if route condition cont...

9/9/2021

Joe Letty

Enabled geo orchestration

9/9/2021

Silly Budd

Update manifest to use geopair cna...

8/9/2021

Joe Jones

More >

Your feed

All

CO

Colin Oaks approved your pull request

Aug 20, 2021

api versioning fixes

Created 8/19/2021

Platform...

NK

Nairobi Kones approved your pull request

Aug 20, 2021

api versioning fixes

Created 8/19/2021

Platform...

JC

Jin Channing replied to your comment on a pull request

Aug 16, 2021

Please update the metric here too.

Update shoebox metric instrumentation for Gateway service

Created 8/7/2021

Hub-Main

AL

Aria Hingworth replied to your comment on a pull request

Aug 16, 2021

Nit: Typo in 'Accessor'

Fix timer intervals to match with vt

Created 4/29/2021

Hub-Main

People you interact with

RF

Roy Fong

You recently reviewed their pull request

NK

Nairobi Kones

Recently reviewed your pull request

JL

Joe Letty

Among your top interactors

AK

Akash Kanodia

Among your top interactors

More >

Q9 For each section on your Codebook profile, please rate it based on how useful did you find it ?

	Not at all useful	Slightly useful	Moderately useful	Very useful	Extremely useful
Bio (containing name, job title and languages used)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Repositories contributed to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active Pull Requests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active Work items	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active Code Reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People you interact with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q10 Select any sections in which you want to see changes: (multi-select)

☐ Bio section. Please explain: \_\_\_\_\_

☐ Repositories' section. Please explain:  
\_\_\_\_\_

☐ Active Pull Requests section. Please explain:  
\_\_\_\_\_

☐ Active Work items section. Please explain:  
\_\_\_\_\_

☐ Active Code Reviews' section. Please explain:  
\_\_\_\_\_

☐ 'People you interact with' section. Please explain:  
\_\_\_\_\_

☐ 'Feed' section. Please explain:  
\_\_\_\_\_

Q11

**(Software) Development activity:** We refer to this term throughout the survey. It constitutes items on the left side of the SDLC like work items, PRs, code reviews etc. and right side of the SDLC like build, test reports and deployment reports. Additionally, It may also constitute other items that are important to you in the software development process.



Q12 You would like to: (multi select)

☐

use a merged feed from development activity (e.g.: PRs, work items etc.) with Office resources activity (e.g.: Design document (word doc) that may be related to the feature being developed in a PR you are interested in)

☐

receive updates about trending issues/bugs related to engineering systems (e.g.: build system, Azure services is facing downtime)

☐

follow specific issues/ bugs in your projects through a newsfeed

*Display This Choice:*

*If Q5 != Individual Contributors (SDE, Senior Software Engineer etc.)*

☐

use a separate news feed view for your own development activity and that of your team that you manage

*Display This Question:*

*If Q5 != Individual Contributors (SDE, Senior Software Engineer etc.)*

Q13 What items are you interested to see on your team's newsfeed?

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Q14 For something like Codebook that presents your developer newsfeed, where would it be most interesting or useful for you? Rank these options in a preference order from 1(most preferred) to 6 (least preferred):

- \_\_\_\_\_ IDE (Visual Studio, Visual Studio code)
- \_\_\_\_\_ Source control system (Azure DevOps, GitHub)
- \_\_\_\_\_ Separate website
- \_\_\_\_\_ Teams
- \_\_\_\_\_ Outlook
- \_\_\_\_\_ Edge browser 'New tab' page



Q15 What do you like about Codebook?

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Q16 Please list any other changes that you want to see on Codebook:

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End of Block: Survey Section 1: Codebook feedback

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Start of Block: Survey Section 2: General questions Newsfeeds

Q17

**Section 2: Newsfeeds in software development**

Q18 Your work (w.r.t. software development) involves: (multi-select)

☐

collaboration outside of your team

☐

collaboration across significantly different (more than 6 hours) time zones

Q19 How directly active (e.g. submitting pull requests, code reviews, managing work items etc.) you are in software development process?

- ☐ I contribute frequently across multiple repositories/ source control systems.
  - ☐ I contribute frequently to a single repository.
  - ☐ I contribute occasionally.
  - ☐ I don't actively code.
- 

Q20 How **challenging is it for you currently**, to discover & manage development activity that is relevant for you? (This may include your development activity and that of your team/collaborators)

- ☐ Not challenging at all
  - ☐ Slightly challenging
  - ☐ Moderately challenging
  - ☐ Very challenging
  - ☐ Extremely challenging
- 

Q21 Would you be interested in consuming and managing your (and your team's) development activity through a centralized newsfeed?

- ☐ Yes
  - ☐ No. Because ... \_\_\_\_\_
-

Q22 How comfortable are you sharing information about your development activity to others?

- ☐ Comfortable to share all my development activities.
- ☐ Comfortable to share few of my development activities. Optionally, please list in the text box below the developer activities that you would NOT be comfortable sharing with others:
- \_\_\_\_\_
- ☐ Not Comfortable to share any of my development activities
- 

Q23 How much of a concern is information overload for developer newsfeed?

- ☐ Minor concern. I am happy to get updates about all my development activities in my news feed.
- ☐ Major concern. I would like to skip some of the information related to my development activities. Please mention development activities that you would like to skip:
- \_\_\_\_\_
- 

Q24 Would you like algorithmic filtering in the newsfeed? e.g. filtering development activities that may be more important to you using an algorithm.

- ☐ Yes. Very much
- ☐ No. I would like to view the all updates in my news feed in a chronological order.
- ☐ I would like to have options to switch between a chronological feed and an algorithmically filtered feed.

End of Block: Survey Section 2: General questions Newsfeeds

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Start of Block: Survey Section 3: Information pain points

Q25

**Section 3: Information/coordination pain points in software development**



Q26 Pick the tasks that are most important to you, and where if you had a new tool that could make this task easier, it would have a big positive impact on your work day: (multi select)

- ☐ Enumerating the code, bug reports, work items, specifications, etc., I modified recently or care about (but not modified recently).
- ☐ Finding my collaborators' engineering activities, discovering which teams/other engineers a given engineer collaborates with etc.
- ☐ Finding out who the most relevant engineers (SDEs, SDETs, PMs, operations, leads, etc.) are in order to contact for a given feature, API, product or service.
- ☐ Finding out who owns some code/ specification or has ever worked on it in the past.
- ☐ Getting a list of repositories, directories where the related code, bug reports, work items, documentation etc. are located for a given feature, API, product or service.
- ☐ Being notified that there is a recent change that affects my code or work items
- ☐ Finding out which teams own the feature, product or service I or my team depend on.
- ☐ Finding out everyone outside my team who depends on my feature, API, product or service.

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Q27 What are the most important search scenarios in software development that you would like to get improved?

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End of Block: Survey Section 3: Information pain points

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Start of Block: Survey Section 4: Additional Ques ( Demographics + WFH)

Q28

**Section 4: Additional Questions**

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Q29 What is some of the useful information of development activity missing/ hard to find in your software development process during WFH? (This could be your development activity/ development activity of your collaborators/reports)

\_\_\_\_\_

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Q30 Your team is expected to settle into a \_\_\_\_\_ work model in the future.

- ☐ fully remote
  - ☐ fully on-site
  - ☐ hybrid
  - ☐ I don't have an idea!
- 



Q31 How many **years** have you **worked at Microsoft**? (decimals okay)

\_\_\_\_\_

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Q32 In what **location** do you primarily work?

- ☐ North America: USA - Puget Sound regions (Redmond, Bellevue, Seattle, Sammamish, etc.)
  - ☐ North America: USA - Other
  - ☐ North America: Canada, Mexico
  - ☐ Central America and South America
  - ☐ Europe
  - ☐ Asia: China
  - ☐ Asia: India
  - ☐ Asia: Middle East
  - ☐ Asia: Other
  - ☐ Australia, New Zealand, Oceania
  - ☐ Africa
  - ☐ Not listed. Please specify: \_\_\_\_\_
- 

Q33 What **gender** do you identify with the most?

- ☐ Woman
- ☐ Man
- ☐ Non-binary / gender diverse
- ☐ Prefer to self-describe: \_\_\_\_\_
- ☐ Prefer not to answer

End of Block: Survey Section 4: Additional Ques ( Demographics + WFH)