



# WOMEN OF OPEN SOURCE SOFTWARE

## MOTIVATIONS AND EXPERIENCES



Session

Diversity, Equity & Inclusion MC

🕒 24 Sep 2021, 07:00



# HELLO!

My name is Vandana Singh and I am an Associate Professor at the University of Tennessee and I have been conducting research on OSS for about 20 years.

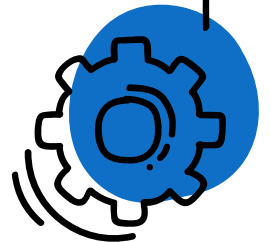
I am here to talk about my research about women of OSS.

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# AGENDA

- ❖ Diversity in OSS – My research
- ❖ Why women join OSS?
- ❖ Why they stay in OSS?
- ❖ What are their experiences of contributing to OSS?
- ❖ Strategies for welcoming more women to OSS



## MY RESEARCH PROJECTS ON DIVERSITY IN OSS

1. Motivated and Capable but No Space for Error – Women’s Experiences of Contributing to OSS  
Surveys and Interviews
2. Women Only Spaces – “Safe Spaces”  
Women’s Forums Content Analysis
3. Women supporting each other in OSS  
(5 forums, 10,701 messages, and 1,344 participants)
4. Codes of Conduct and their role in OSS  
OSS websites Content Analysis
5. Discrimination, hostility, and misogyny in OSS  
CoC content analysis
6. Intersectionality and OSS
7. What made you leave OSS? Women and Under-represented minorities

<https://sis.utk.edu/vandana/women-in-oss>

## RESULTS FROM A SURVEY OF WOMEN IN OSS

### ❖ 58 women respondents

- ❖ Women focused mailing lists of 8 OSS projects
- ❖ Combination of open ended and closed questions on the survey

Name of Country	%	# of Respondents
United States of America	34.62	18
Canada	17.31	9
Germany	7.69	4
Estonia, Czech Republic, Spain, Chile, Sweden	3.85	2 each (5 countries)
Bangladesh, Austria, Colombia, Albania, Bolivia, France, India, Italy, Norway, Romania, UK	1.92	1 each (11 countries)
Prefer not to answer		6



1

# MOTIVATIONS TO JOIN

Why women join OSS?

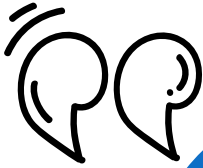
## MOTIVATIONS FOR FIRST TIME PARTICIPATION IN OSS

- ❖ Personal reason such as encountering a problem while using the software (e.g. a missing feature, bug or lack of documentation) and a **desire to fix it**
- ❖ **Encouraged** by a boss, **mentor** or professor to contribute
- ❖ Introduction to OSS through formal events like **Hackathons** on college campuses
- ❖ Contributing to OSS as part of their **full-time job**

## MOTIVATIONS FOR FIRST TIME PARTICIPATION IN OSS

- ❖ To **learn** how to support software development process
- ❖ An opportunity to learn and **work with experienced programmers**
- ❖ Success of **specific projects**
- ❖ **Belief in the ideals** of transparent, public, free, open shared information, tools, and culture
- ❖ To contribute to OSS to support the movement for **reciprocity**





*"I thought the forum was the best way to learn"*

*"Fixed some limitations in the handling of product features, and decided it might be useful to others"*

*"the opportunity to work with experienced people while still being an undergrad"*

*"Trying to start contributing to open source software"*

*"Supporting OSS movement, having freely accessible software"*



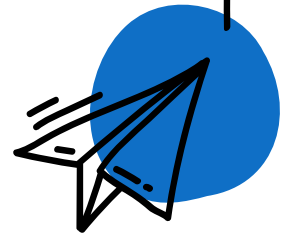
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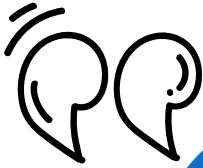
# MOTIVATIONS TO STAY

Why women stay in OSS?

## CONTINUED PARTICIPATION IN CONTRIBUTING TO OSS

- ❖ Reciprocity
- ❖ Part of their job
- ❖ Part of life
- ❖ Ideology – belief in the OSS philosophy
- ❖ Sustainability of OSS
- ❖ Learning and Collaboration
- ❖ Recognition
- ❖ To get more women involved





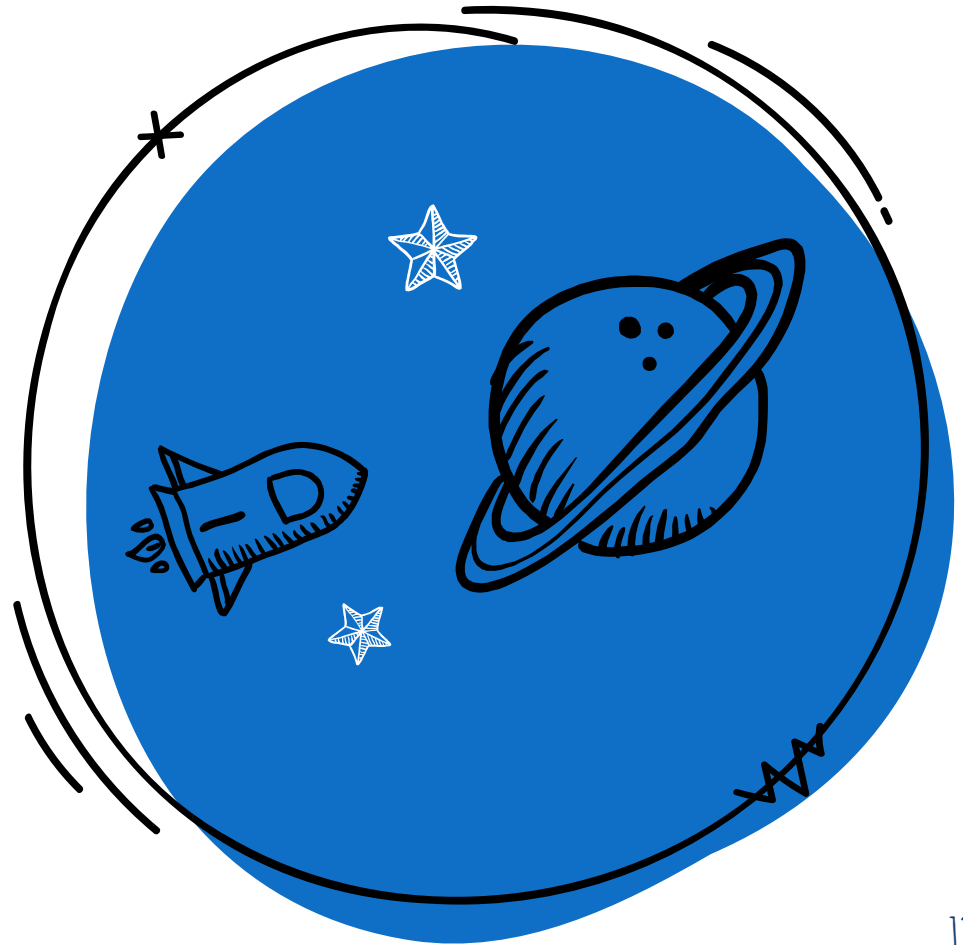
“because I like Free Software and want to give back”

“Because I found that i had a natural knack for it and I am good at what I do and it excites me to be part of something so huge and selfless and something that would beneficial to the whole world”

“for the community, because software needs more eyes, shouldn't be written again and again”

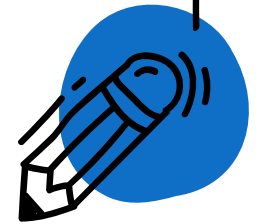
“Today I work for a company that pays me to contribute to OSS. I was initially interested in OSS because I like the idea of working in the open, sharing knowledge and being able to learn how any particular software works.”

# EXPERIENCES OF WOMEN OF OSS



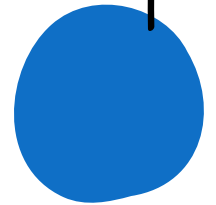
## FIRST EXPERIENCES OF PARTICIPATING IN OSS

- Eighty percent (!!!) described their first experience participating in OSS as **positive** and used words such as positive, exciting, good, enjoyable, fast, and simple
- Ten percent of survey participants had a negative first experience
- Ten percent had a neutral first experience.



## WHAT DOES THIS MEAN?

- ❖ Positive first experience encouraged further participation
- ❖ Some women stayed and continued contribution despite negative first experience



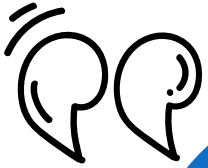
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## TREATED SAME AS MEN

Are women's contributions treated same as contributions from men?

52% responded negatively





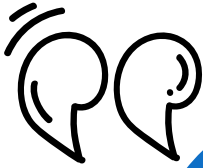
Are women's contributions treated same as men?

“My contributions are sometimes challenged more than they would be if I were perceived as male.”

“They always consider mine less technical”

“More likely to receive condescending, dismissive, or critical response”

“More tendency to question my technical abilities and to condescend, interrupt, put me down.”



Are women's contributions treated same as men?

"I do think that the places I tend to contribute in OSS communities (documentation, testing, bug fixing) do sometimes get classed as women's work (or less-skilled work), even though they're essential. So, from that perspective, yes."

"more likely to be questioned, people expect more emotional labor / much nicer responses"

4

## WHAT CAN THE COMMUNITY DO?

How can the community support women participation in OSS?



## FEEDBACK FOR OSS COMMUNITIES

- ❖ “Be supportive, be friendly, be respectful, be encouraging, and don't dismiss women or girls by default.”
- ❖ “Have **guidelines for communications**, be explicit about rejecting or accepting contributions”
- ❖ “Be better at **mentoring**.”
- ❖ “Ensure that there is a diverse community when a particular open source software package is small, routinely **collaborate with women**”
- ❖ “**Give credit!** Not just for the implementation, but also for the ideas and the conversation leading up to a change.
- ❖ And **protest bad language and rude behavior immediately**, - no waiting.”

## FEEDBACK FOR OSS COMMUNITIES

- ❖ “Progressive, **enforced codes of conduct** and clear expectations for acceptable interpersonal behavior”
- ❖ “**don't assume** all users are women and all developers are men in presentations and other interactions“
- ❖ “**Reach out** to more women by **taking the time** to at least explain and educate them about the basics and importance of OSS, I am here today because a OSS Contributor took the time and effort to get me interested in it. So, at least start off with the female members in your family and friends.”
- ❖ “Leave the **stereotypes** out the door.”
- ❖ “Don't isolate women, **include them in activities**, conferences, giving positions of authority to women and respect their contributions.”

## TO SUMMARIZE

- ❖ Women have similar motivations as men to join OSS
- ❖ Positive first experience with OSS could lead to long term retention in OSS
- ❖ Women believe their contributions are not treated same as contributions from men
- ❖ Communities can improve retention of women by not isolating them; creating a zero tolerance policy for toxic communication; enforce CoCs; mentoring; give credit

## CHALLENGES OBSERVED ACROSS MY PROJECTS

- ❖ Lack of allies
- ❖ Lack of positive storytelling
- ❖ Visible enforcement of Codes of Conduct
- ❖ Lack of awareness

## LACK OF AWARENESS

- ❖ About the **status of diversity** in OSS
- ❖ About the **value of diversity** – measurable impact on the overall value of a brand/product
- ❖ About **the level of hostility/discrimination/harassment** faced by minorities
- ❖ About the **IMPACT of this hostility** on the careers and well being of minorities



## CALL TO ACTION

- ❖ Create and support **Safe spaces for women**
- ❖ Create and Enforce customized **Codes of Conduct**
- ❖ **Highlight** the profiles of successful women
- ❖ Facilitate **mentoring and networking** opportunities
- ❖ Engage **women in OSS governance**



# QUESTIONS, IDEAS, DISCUSSION



THANKS!

