

Dear Jessica,

We would like to thank the Carnegie Mellon Women's Association for the opportunity to nominate **Parmita Bawankule** for the CMWA 2021 Scholarship. Parmita is an outstanding leader in our student organizations, *Women@SCS* and SCS4ALL. She has additionally worked as a leader and role model as a teaching assistant in several of our core courses. Parmita has worked diligently on behalf of the community, and especially for the community of women. Below are some of Parmita's contributions to illustrate how deserving she is of the CMWA 2021 Scholarship.

Women@SCS and SCS4ALL

Parmita is a committee member in both *Women@SCS* and SCS4ALL. While all students in SCS can be involved with *Women@SCS* and SCS4ALL it is at the committee level that their leadership shines through. Parmita has worked diligently on behalf of the SCS community contributing to programs that help ensure students (especially women) do not miss opportunities for professional development, for networking, for mentoring, and for encouragement. Students like Parmita help sustain the culture that works well for the success of all students in SCS. Parmita has been a committee member since her first year at CMU, not simply attending and contributing but taking active leadership in our events and activities. She has also been successful at bringing younger students on board to help them feel included and valuable.

Parmita's dedication to the community continued through the COVID conditions and indeed her leadership at this time has been extremely valuable. She set up slack workspaces making everyone more connected. She hosted the meetings and organized games which helped people have fun while staying in touch.

Parmita has played a significant role in building our awesome community! Her demonstrated commitment suggests she will be one of those students who continues a strong association with the School of Computer Science after her graduation.

Her student colleagues in SCS4ALL comment:

"I'm really grateful to have been good friends with Parmita over the past few years, both in teaching and through her leadership of SCS4ALL. I really appreciate her willingness to help everyone, whether through recording high quality recitation videos, making illustrations of lecture content, or organizing events within SCS to bring both the SCS student body and the larger community together." *Misha Ivkov* <mivkov@andrew.cmu.edu>

"Over the past few years, Parmita has been an absolutely phenomenal person to work with. She is always able to bring an extraordinary amount of talent, enthusiasm, and creativity to tackle any problem you present at her, be it teaching or organizing events. She truly put her heart in her work." *Sayan Chaudhry* <sayanc@andrew.cmu.edu>

Big/Little Sisters

One of the ongoing (since 2000) successful programs of *Women@SCS* is the Big/Little Sisters mentoring/networking program. Parmita joined as a little sister when she arrived at CMU and in

the following years became a Big sister, meeting with her little sister regularly, helping her feel comfortable in the SCS environment, and contributing to the group sisters activities. Her new little sister comments:

“Although I've only had Parmita as my Women at SCS mentor for one semester so far, I can tell she is not only hardworking and intelligent but also very kind and thoughtful. She's very dedicated to the many organizations she is in, and she doesn't hesitate to help others whenever she can. I'm glad to have her as my mentor, and I know she will achieve great things!” *Stephanie Guan* sguan2@andrew.cmu.edu

Teaching Assistant Roles

Parmita was a teaching assistant for two of our critical core courses, 15-151 Foundations of Mathematics for CS and 15-251 Great Ideas in Theoretical Computer Science, playing a leadership role in both courses.

In 15-151, Parmita developed a set of graphically annotated notes (called Parmita's Ponderings) that had relatable cartoons and great content. They made high-level material accessible and less intimidating for beginning students. An example is given below:

Exercise 1.3.17 aka Failed Horse Induction Example

$P(n) :=$ "All groups of n horses are the same color" } These are okay
WTS $P(n)$ is true for $n \in \mathbb{N}^+$

BC: $P(1)$ is true because one horse is the same color as itself * $P(1)$ is true, but what about $P(2)$???

IH: Fix $k \in \mathbb{N}^+$. Assume $P(k)$ i.e. Assume that all groups of k horses are the same color

IS: WTS $P(k+1)$ i.e. WTS that all groups of $k+1$ horse are the same color

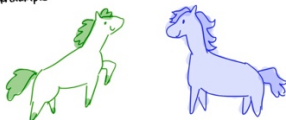
Consider a set of $k+1$ horses.
Remove one horse from the set.
By the IH, the remaining k horses are the same color.
Remove a different horse from the set.
By the IH, the remaining k horses are the same color.
Thus they must all be the same color. ■

This induction step only works if there are at least 2 horses
After you pick 1 horse, you still need "a different horse" to pick next — you need at least 2

Conclusion: This proof fall into the trap of not having enough base cases! If you could somehow show that $P(2)$ is true, then it would actually work!

But of course, $P(2)$ isn't true, so it fails.

Counterexample



In 15-251, Prof. Anil Ada states that Parmita “is arguably the most talented teacher I had as a teaching assistant. Her explanations of concepts are amazing. She has created videos for 251 explaining recitation problems. She has created “proof visualizations” for some of the conceptually difficult proofs in the textbook. These are slide decks that the students can click through to understand visually how the proof works. And these take a lot of effort/time to prepare!!! She is a superstar TA and the students love her.”

Some comments from students about Parmita are as follows:

“Parmita has great notes and intuitions and study advice. I really appreciate parmita always reaching out, without her i probably wouldnt make it to the end of the semester.”

“Love your recitation as they're always fun and full of energy. I also felt very safe asking questions throughout. Thank you for your help and advices! Parmita is the best.”

“You're seriously a legendary T.A for both 15151 and 15251, thanks for all the help both years!”

“Parmita is an amazing TA who always makes sure everyone understand explanations with her amazing visuals and videos that are super motivating and made me more interested and engaged with the material. She really helped my understanding in the class and even showed purpose of what we were doing and how they relate to the real world.”

“Parmita is super good about breaking down the problem in a digestable manner and walking through the problems in general. I never feel stranded or completely confused and I really enjoy asking Parmita questions since I know her explanations are always straightforward / not be overly convoluted or complicated.”

“Just thank you for being so positive and happy all the time. It really motivates me to feel better!”

Final Thoughts

As Parmita’s academic advisor, I can relate to the last student comment. Parmita is always upbeat and positive, and tackles any challenge put in front of her. She has led SCS tours for visiting families and even created several videos for our virtual tour for 2020 (see stops 4 and 5):

<https://www.cs.cmu.edu/scs-virtual-tour>

When we put out a call for nominees for the CMWA scholarship for this year, a number of us thought of Parmita immediately, and we are happy to put her forward as your recipient for 2021.

Sincerely,



Thomas J. Cortina
SCS Associate Dean for Undergraduate Programs