TALKING IN CODE: CODE REVIEW AS A FORM OF COMMUNICATION

Regina Lisinker, Andrew Zieffler, Chelsey Legacy
University of Minnesota - Twin Cities, USA
lisin003@umn.edu

INTRODUCTION

As coding and computation increasingly permeate statistics and data science courses, it is important for students to not only learn coding syntax and language, but also how to communicate with other data scientists. Code review implements a consistent feedback loop between coder and reviewer(s) to systematically assess code quality and enhance team communication. While code review is a commonplace in industry, it is not often implemented in data science classrooms. This study aims to gain insights into students' code review habits and develop tools to help promote good code review practices.

METHODS

The NSF-funded DSC-WAV project pairs teams of undergraduate data science majors with local community organizations to give students real world experience wrangling, analyzing, and visualizing data. Team interviews conducted with the previous cohort of DSC-WAV students were used to establish a baseline understanding of students' code review habits. Students in the current cohort were given code review resources to utilize during the latter half of their projects. More data was collected through surveying students and interviewing their faculty advisors after the code review implementation.

RESULTS

The results presented in this poster will include an analysis of survey responses which highlight team dynamics and decision-making processes, project organization, and student usage of code review supplementary resources. Additionally, results from the faculty interviews identified advisor involvement, promotion of created supplementary materials, and informal assessment of skills gained by students.

CONCLUSION

This work provides resources and pedagogical practices to implement peer code review in the classroom. Results show how undergraduate data science majors conduct code review, identify skills gained, and shed light on the challenges of implementation. Future work could develop code review activities within a traditional course, build on code review resources, and attempt to mitigate the challenges of code review implicit in a classroom setting.

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