

BUET ACM CHAPTER  
*presents*

# When Software Artifacts Disagree

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Zahin Wahab is a PhD student in the Department of Computer Science at the University of British Columbia. She received her B.Sc. in Computer Science and Engineering from BUET in 2021 and her M.Sc. from BUET in 2024. She is currently a Lecturer at BRAC University and is on study leave to pursue her PhD. Her research interests lie in software engineering, particularly fuzz testing and automated techniques for finding software bugs.

## Abstract

Software bugs do not always appear as obvious crashes. Often, software produces an output that looks reasonable but differs from what developers or users expect. Detecting such correctness bugs requires a test oracle: a way to determine whether observed behavior is correct. However, real-world software rarely has a complete specification, and the available specifications may themselves be incomplete or incorrect.

In this talk, we will focus on how inconsistencies occur between different software artifacts. First, I will present PyZZa, a differential-testing fuzzer for finding behavioral discrepancies between CPython and PyPy in the Python standard library. PyZZa automatically generates API call sequences, executes them across both interpreters, and compares their results to uncover cross-interpreter bugs. I will then present DocPrism, a multi-lingual tool that uses large language models to detect inconsistencies between code and method-level documentation. Together, these projects illustrate two complementary directions: comparing one implementation against another, and comparing an implementation against its documentation. I will conclude with discussing the harder challenge beyond detecting differences—deciding which differences represent real and actionable software problems.

**When:** Saturday, 8<sup>th</sup> August, 2026 (2:30 PM)

**Where:** Graduate Seminar Room (ECE 503), Department of CSE, BUET

**Organized by** BUET ACM Chapter, Dept. of CSE, BUET.