Math 4610 Fundamentals of Computational Mathematics - Lecture 5

The Root Finding Problem for Functions of One Real Variable *

Joe Koebbe

September 15, 2019

*These notes are part of an Open Resource Educational project sponsored by Utah State University

The Root Finding Problem for Functions of One Real Variable

In this lecture we will take up one topic in how to work within the "git" framework and more on roundoff error, problems that arise in using arithmetic operations on machine numbers, and methods that can be used to modify algorithms and code to mitigate some of these problems. That is, we will talk about how to control the accumulation of roundoff errors for those sources of error that can be addressed by computational scientists.

Content Items:

There are a couple of features in the code that need to be explained.

- **Using Version Control Systems (VCS) - git:** A brief discussion of "git" will be taken up in class to show how to work and collaborate with other students and your instructor. The "git" platform allows you to work on a laptop at home and then "push" your work and any modifications to Github where the instructor can get to the work. > > go there (pdf)
- **Statement of the Root Finding Problem:** Many applied mathematics problems can be stated in the form of a general root finding problem. In this lecture the general root finding problem will be stated. Algorithms for the root finding problem will be presented in the next few lectures. > > go there (pdf)
- **Wrap up and Questions:** If there is time and anyone has questions about the lecture, these will be addressed.

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