**Continued Fractions: How to understand self similar and infinite processes**

Imagine the most dreaded math chapter from middle school and the concept that is least understood in high school and now combine the two. The infinite continued fraction is the result of placing fractions within fractions indefinitely. These fractions make appearances in math contests to highlight tricks for manipulating self-similar, infinite processes. However, these tricks make problematic assumptions that can lead to paradoxes. This talk will use continued fractions to highlight the non-intuitive nature of self-similar, infinite processes. A motivated method to approach these processes is provided. The talk includes recursive definitions of these processes and epsilon-delta style proofs. The talk ends by introducing continued fractions as an analytical theory and some interesting theorems are also discussed.