A Better Keyboard for People with Motor Disabilities

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The Project

- The Research Goal:
  - Design an accessible, software-based keyboard layout that minimizes the distance traveled from one letter to the next for a person typing with a single pointer.

- Why does it matter?
  - On average, people with motor disabilities only type 18 words per minute while someone with no disabilities, on average, types 70 words per minute. This disadvantage is an issue because the average person uses a keyboard everyday.
By creating a word prediction feature and analyzing the patterns of letter frequency in a 15,000 word database, I have successfully designed several possible layouts that have been proven to require less travel distance than the QWERTY keyboard. These layouts are still being compared, analyzed, and tweaked to find the optimal layout. The next step of my project is to create the keyboard.

The average person uses a keyboard everyday. Nowadays, you need a keyboard to apply for jobs and colleges, write papers, do homework, to surf the web, and more. Statistics show that people with motor disabilities type at a much slower rate than the average person. A keyboard that allows people with motor disabilities to type faster and with less physical movement will make their lives easier because of how often keyboards are used in our daily lives.