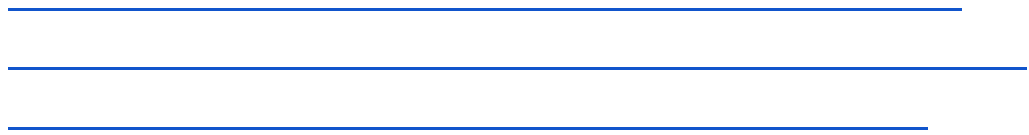


With the \$2.7 billion one-way ticket to Mars, one would think the Perseverance Rover would have a modern computing system with a fast CPU. One would be wrong - partly, that is.

Those who experienced the late 90s will recall the curvy, colorful, see-through Apple iMac G3 released in 1998. It arguably saved Apple from bankruptcy; today, Apple is valued at well over \$2 trillion. The iMac G3's processor chip, the PowerPC 750, is just as old and slow compared to modern chips. Despite that, it was chosen to power Perseverance, for many reasons.

For one, it's the first processor to use dynamic branch prediction, still used to this day. It tries to predict where the code "branches off" at a place of decision, and runs the possibly upcoming code ahead of time. Today, chips are more complex, but the PowerPC 750 is optimal: less likely to break, yet still efficient - in fact, 10 times faster than those in old rovers. Perseverance has a NASA version of Apple's chip, the \$200,000 RAD750. It blocks radiation, as Mars has no ozone layer, and withstands temperatures from -67 to 257 degrees Fahrenheit! What's more, this is not NASA's first time using the PowerPC 750: it powers the Curiosity Rover, Fermi Space Telescope, Lunar Reconnaissance Orbiter, and many others as well!



Welcome, Keisha Tennessee! Keisha Tennessee is the new Computer Science Coordinator for the Virginia Department of Education. She has over ten years of classroom experience, has a Career Technical Education (CTE) background, and is a National Board Certified Teacher. Keisha has worked with CodeVirginia for six years providing professional development for teachers. Likewise, she has worked on various writing