

Novel data storage system ready to offer relief for frustrated users, companies

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Most smartphone owners know the frustrations of trying to look through digital photos on a social media app to find the one they want. The pictures can be slow to load and sometimes not load at all.

Purdue University innovators have developed a solution to help cut down loading wait times and provide more efficient data [storage](#) options for corporations of all sizes. The researchers developed a novel data storage and computer technology system.

"Most organizations rely on something called erasure coding to reduce data storage costs," said Vaneet Aggarwal, an associate professor of industrial engineering in Purdue's College of Engineering. "The rapid growth of streaming and e-commerce has stressed underlying data storage systems. A key solution to relieving this traffic burden has been caching, which basically involves a computer memory storing popular chunks of data so they can be retrieved quickly."

Chunks of popular data can be stored separately closer to [end users](#), reducing congestion in the network and improving delay times. Among stored data, Aggarwal said, 20% of the content may be accessed 80% of the [time](#), so establishing a priority on this data improves functionality significantly.

The Purdue team developed a novel caching framework with an algorithm that optimizes caching across a distributed storage system, which improves performance by splitting data across multiple physical servers.

"Our system provides a big advantage in that it reduces latency to provide a better experience for users and for the organization or company," said Aggarwal, who leads the Cloud Computing, Machine Learning, and Networking (CLAN) Research Labs at Purdue. "Latency is the time taken to obtain the file following an instruction for its transfer. It might be better known to users as that annoying wait time for something to download."

Provided by Purdue University

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