

What PostgreSQL Extensibility Can Teach Us About Composable Data Management Systems (Keynote Talk)

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ABSTRACT

Many well-known database systems allow users to write extensions, which is custom code that adds new features to a DBMS while maintaining its core functionality and infrastructure. Our analysis of database system extensibility reveals that PostgreSQL has the most flexible extension API. PostgreSQL's extension API allows users to override much of the core DBMS's functionality, including the entire query execution layer. Some extensions (e.g., Citus, Timescale, Apache Age) are essentially unique systems that utilize the PostgreSQL codebase structure as a skeleton. Analyzing these extensions and the APIs exposed by PostgreSQL that allow these extensions to exist yields many valuable insights about composability. In this talk, we will cover the lessons that PostgreSQL's extension API provides to database system composability.

Speaker Biography: Abigale Kim is a PhD student with Prof. Xiangyao Yu at the University of Wisconsin—Madison, where she studies GPU accelerated database systems. Previously, she was a

Master's student with Prof. Andrew Pavlo at Carnegie Mellon University, where she researched database system extensibility. She has also worked on various database systems in industry (TileDB, YugabyteDB, AWS Redshift). She completed her undergraduate degree at Carnegie Mellon University with a concentration in computer systems.

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