



# EXPLORATORY SYSTEMS LAB UC DAVIS

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Mohammad Sadoghi

NorCal DB Day 2018

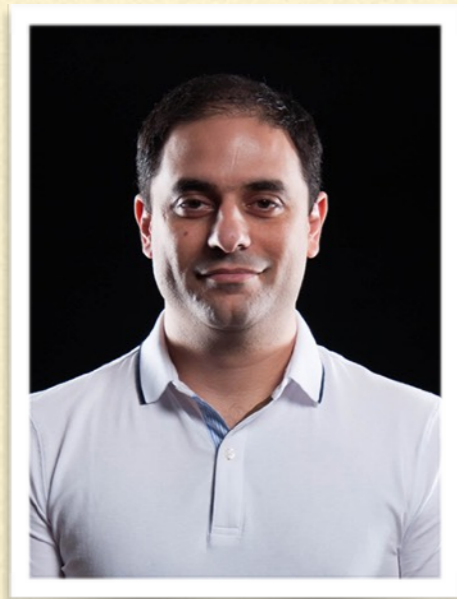
May 4, 2018



**UC DAVIS**  
UNIVERSITY OF CALIFORNIA

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# ExpoLab Members



Mohammad Sadoghi  
*(Principal Investigator)*



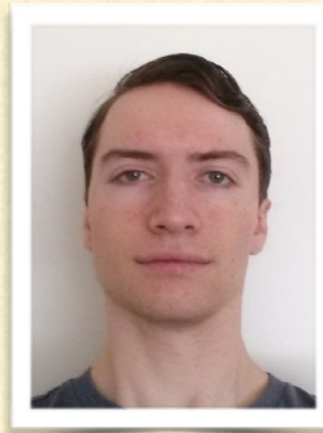
Suyash Gupta, PhD  
*(Blockchain)*



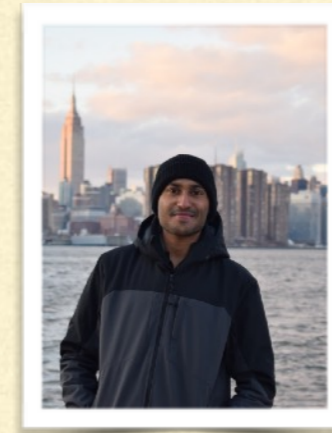
Thamir Qadah, PhD  
*(Coordination-free Concurrency)*



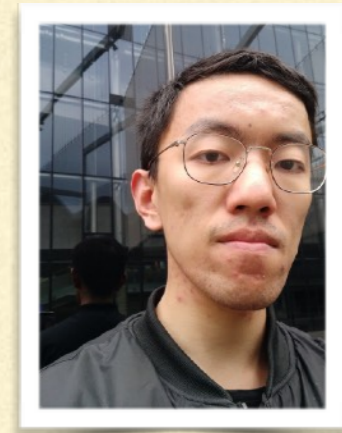
Masoud Hemmatpour, PhD  
*(RDMA KV-Stores)*



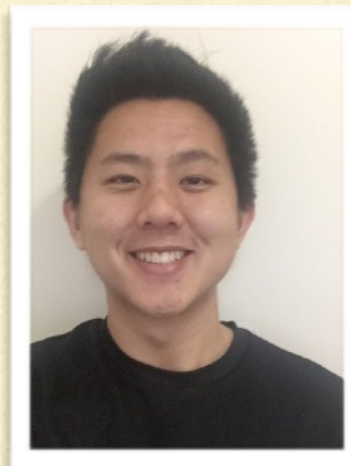
Domenic Cianfichi, MSc  
*(Blockchain)*



Shreenath Iyer, MSc  
*(Blockchain)*



Robert He, MSc  
*(Coordination-free Concurrency)*



Patrick Liao, BSc  
*(Blockchain)*



Sajjad Rahnema, PhD  
*(Blockchain, Fall'18)*

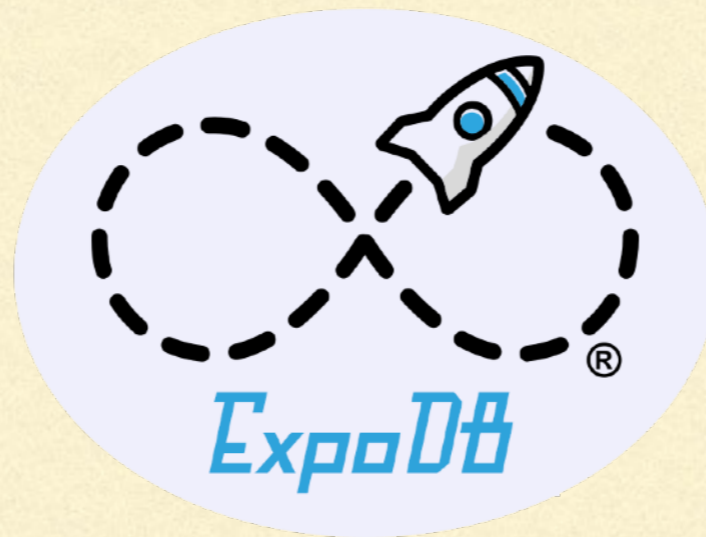


Nikhil Wadhwa, PhD  
*(Blockchain, Fall'18)*

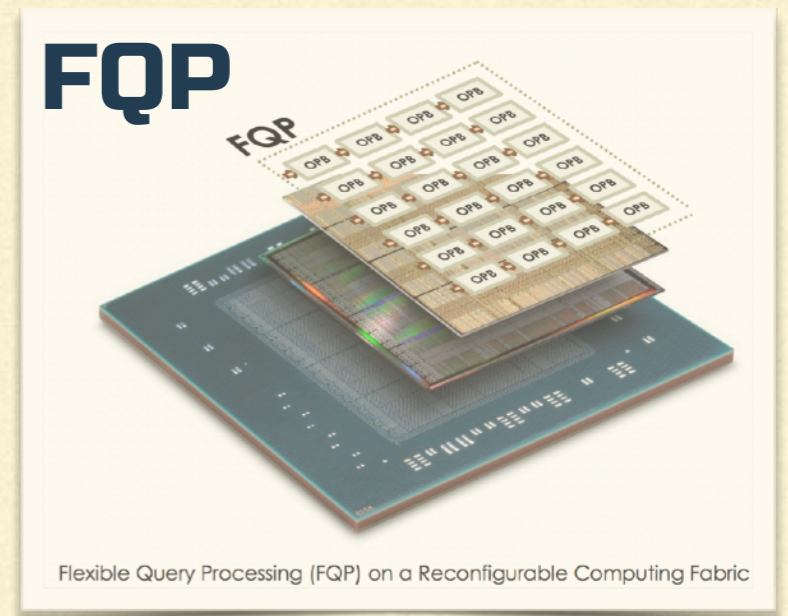


*GRFusion*

(Native Graph Engine on VoltDB)



Exploratory Data Platform  
(*ExpoDB*)



Flexible Query Processor  
(*FQP*)

A distributed, replicated, in-memory database

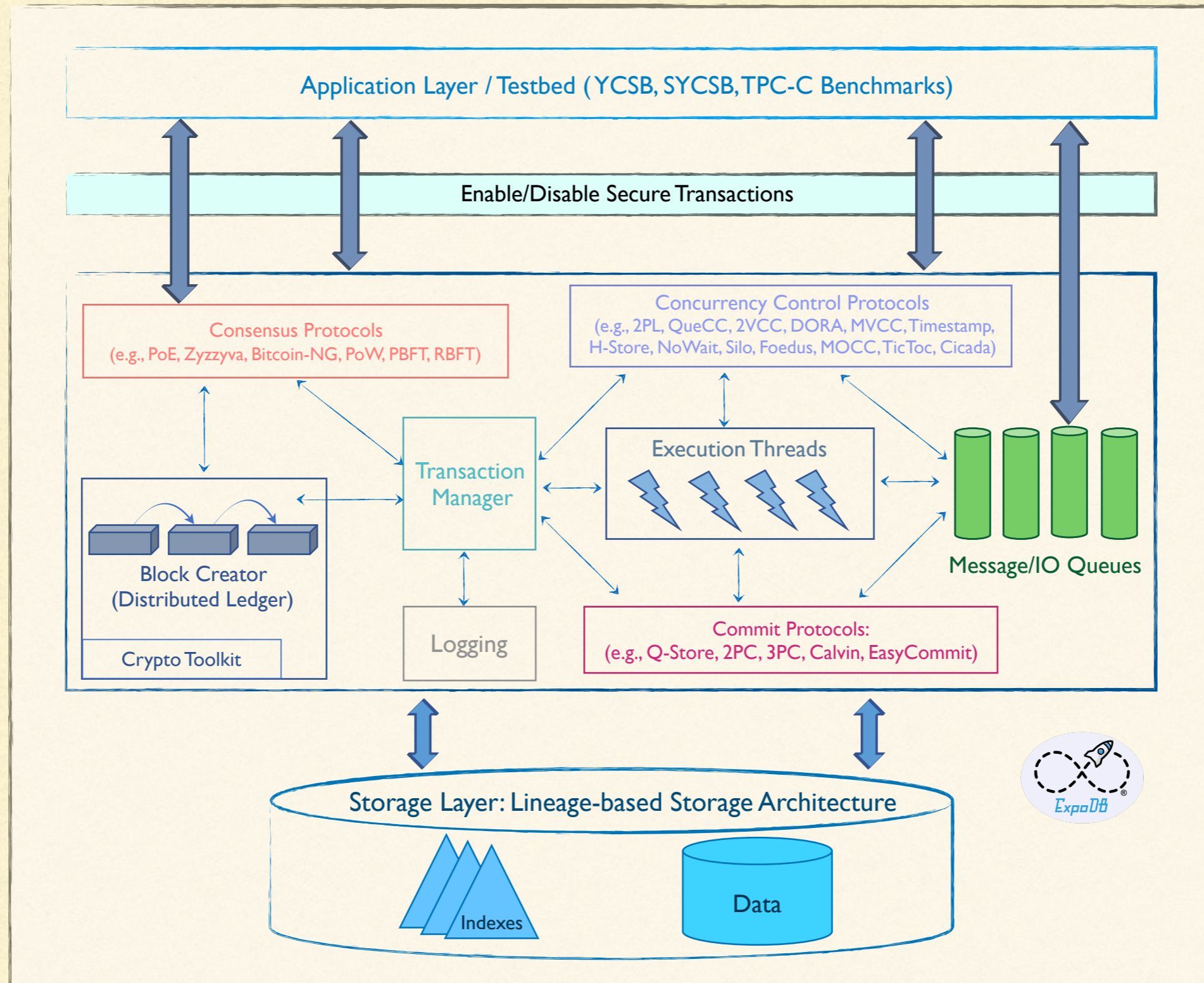
A concurrency, agreement, and consensus protocols testbed

A distributed ledger, secure transactional capabilities

A decentralized platform (no central authority), a democratic computational model

A unified transactional and analytical storage architecture (HTAP)

# EXPLORATORY DATA PLATFORM (EXPODB)



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# EXPOLAB RECENT ACTIVITIES

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- *ExpoDB: An Exploratory Data Platform.* Suyash Gupta, Domenic Cianfichi, Patrick Liao, Shreenath Iyer, Mohammad Sadoghi (UC Davis)
- *L-Store: A Real-time OLTP and OLAP System.* Mohammad Sadoghi (UC Davis), S. Bhattacharjee (U. Maryland, College Park), B. Bhattacharjee (IBM Research), M. Canim (IBM Research) - *EDBT'18*
- *EasyCommit: A Non-blocking Two-phase Commit Protocol.* Suyash Gupta, Mohammad Sadoghi (UC Davis) - *EDBT'18*
- *EmbedS: Scalable and Semantic-Aware Knowledge Graph Embeddings.* Gonzalo I. Diaz (Oxford U.), Achille Fokoue (IBM Research), Mohammad Sadoghi (UC Davis) - *EDBT'18*
- *A Scalable Circular Pipeline Design for Multi-Way Stream Joins in Hardware.* Mohammadreza Najafi (TUM), Hans-Arno Jacobsen (TUM), Mohammad Sadoghi (UC Davis) - *ICDE'18*
- *Extending In-Memory Relational Database Engines with Native Graph Support.* M. Hassan, T. Kuznetsova, H.-C. Jeong, W. Aref, Mohammad Sadoghi. - *EDBT'18, SIGMOD'18.*

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*THANK YOU*  
*<https://msadoghi.github.io/>*

