ADAM GRAY

Chicago, IL @ adam@adamgray.us adamgray.us adam-m-gray adam-gray

EXPERIENCE

Principal Software Engineer
IBM Cloud Object Storage

August 2021 – Present Chicago, IL

- Lead R&D effort to decouple components within software monolith and begin migration of service to Kubernetes, expanding observability, scalability, and reliablity.
- Lead development for object versioning feature, unlocking key workflows that were not previously availble to COS and helping reach a greater level of parity with competition.
- Member of Invention Development Team to help mentor and enable developers to innovate and properly protect IBM's intellectual property. 37+ patents issued and pending.

Staff Software Engineer
IBM Cloud Object Storage

July 2017 – 2021 Chicago, IL

- Owned critical data ingest path including data input streaming, compression, encryption, key management, metadata management, usage, and data consistency.
- Acted as technical leadership for dozens of features and projects throughout the development process from idea, gathering requirements, design, implementation, testing, and customer deployment.
- Researched and developed data compressability proof of concept in partnership with IBM Research, resulting in potential savings of 5 - 10% in usage
- Researched methodology to have an integrated bucket / data tiering solution for future COS features.

Senior Software Engineer
IBM Cloud Object Storage

November 2015 – July 2017 Chicago, IL

- Developed and acted as technical leadership for integration with IBM Cloud services (IAM, KeyProtect)
- Part of team which brought Cleversafe's on-prem solution to an infinitely scalable solution which is the foundation of IBM Cloud services

Senior Software Engineer
Cleversafe

July 2013 – November 2015 Chicago, IL

- Built Cleversafe's Mirrored Vaults feature, which allowed customers to have only two data-centers instead of three (or more) for multi-site reliability, consistency, and performance at a reduced cost
- Created a unified S3-compliant storage that seamlessly adapts to other industry standard APIs (Swift, HDFS, Webdav, POSIX) on a unifed object storage backend

Software Engineer
Cleversafe

June 2011 – July 2013 Chicago, IL

- Created Cleversafe's dispersed, lock-free, concurrent index when an existing NoSQL key-value store didn't fit Cleversafe's scalability needs
- Reduced time-to-first byte by developing a metadata-local data optimization to reduce disk seeks and network latency by 50% on small object GETs
- Rewrote Cleversafe's streaming data API to be asynchronous and single object writes in excess of 100GB

MOST PROUD OF

IBM Master Inventor
Awarded the title of Master Inventor in October 2021

Cleversafe's Growth
From employee #25 and zero customers to acquisition by IBM and millions of customers

Mentor to Many
Mentored many junior developers to help them with their careers

STRENGTHS

Self-driven Dedicated Mentor
Innovator Diversity & Inclusion
Positive Attitude Excellent Communicator
Big Picture Focus Team Player

Java Python C/C++ Linux NoSQL
REST CI/CD Paxos & Raft
2 & 3 Phase Commit Eventual Consistency
Replication Distributed Clocks Concurrency
Garbage Collection JVM Optimization
Cryptography Identity Access Management
Key Lifecycle Management

LANGUAGES

English
German

EDUCATION

B.S. in Computer Science
Indiana University

2007 – 2011

Computer Science
Purdue University

2004 – 2005

🎗 Patents

- Baptist, A., Gray, A., Horan, S., Legette, W., Resch, J., Volvovski, I., & Wozniak, E. (2020). *Storing data in a dispersed storage network with consistency*. U.S. Patent and Trademark Office. US10628399B2.

- Dhuse, G., Gray, A., Khadiwala, R., Leggette, W., & Resch, J. (2020). *Slice-embedded object metadata*. U.S. Patent and Trademark Office. US10585750B2.

- Dhuse, G., Volvovski, I., Gray, A., & Baptist, A. (2020). *Storing indexed data to a dispersed storage network*. U.S. Patent and Trademark Office. US10671585B2.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Legette, W., Horan, S., … Viraraghavan, P. (2020). *Unidirectional vault synchronization to support tiering*. U.S. Patent and Trademark Office. US10656866B2.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Legette, W., Horan, S., … Resch, J. (2020). *Pessimistic reads and other smart-read enhancements with synchronized vaults*. U.S. Patent and Trademark Office. US10642687B2.

- Gray, A., Hegde, H., Legette, W., Motwani, M., Resch, J., Scholl, D., … Vedpathak, Y. (2020). *Use of key metadata during write and read operations in a dispersed storage network memory*. U.S. Patent and Trademark Office. US10693640B2.

- Gray, A., Khadiwala, R., Dhuse, G., Resch, J., Viraraghavan, P., & Fordyce, R. (2020). *Data compression in a dispersed storage network*. U.S. Patent and Trademark Office. US10594790B2.

- Gray, A. M., & Legette, W. B. (2020). *Method for partial updating data content in a distributed storage network*. U.S. Patent and Trademark Office. US10691541B2.

- Baptist, A., Dhuse, G., Gray, A., Leggette, W., Resch, J., & Volvovski, I. (2019a). *Allocating rebuilding queue entries in a dispersed storage network*. U.S. Patent and Trademark Office. US10241866B2.

- Baptist, A., Dhuse, G., Gray, A., Leggette, W., Resch, J., & Volvovski, I. (2019b). *Allocating rebuilding queue entries in a dispersed storage network*. U.S. Patent and Trademark Office. US20190146877A1.

- Baptist, A., Dhuse, G., Gray, A., Leggette, W., Resch, J., & Volvovski, I. (2019c). *Prioritized rebuilds using dispersed indices*. U.S. Patent and Trademark Office. US10204009B2.

- Borich, F. [Franco], Gray, A., Horan, S., Khadiwala, R., Li, M., Motwani, M., … Vossberg, T. (2019). *Monitoring and sharing registry states*. U.S. Patent and Trademark Office. US10216436B2.

- Dhuse, G., Gray, A., Horan, S., Khadiwala, R., Reid, T., Scholl, D., & Volvovski, I. (2019). *Engaging a delegate for modification of an index structure*. U.S. Patent and Trademark Office. US10467095B2.

- Gray, A., & Dhuse, G. (2019). *Preventing unnecessary modifications, work, and conflicts within a dispersed storage network*. U.S. Patent and Trademark Office. US20190197032A1.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Scholl, D. (2019a). *Linking common attributes among a set of synchronized vaults*. U.S. Patent and Trademark Office. US10423359B2.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Scholl, D. (2019b). *Synchronously storing data in a plurality of dispersed storage networks*. U.S. Patent and Trademark Office. US10387252B2.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Resch, J. (2019). *Generating time-ordered globally unique revision numbers*. U.S. Patent and Trademark Office. US10489247B2.

- Gray, A., Leggette, W., Resch, J., & Seaborn, M. (2019). *Slice-level keyed encryption with support for efficient rekeying*. U.S. Patent and Trademark Office. US10491386B2.

- Leggette, W., Resch, J., Vedpathak, Y., Vas, S., Smith, E., & Gray, A. (2019). *Utilizing data object storage tracking in a dispersed storage network*. U.S. Patent and Trademark Office. US10334046B2.

- Gray, A. (2018). *Prioritizing dispersed storage network memory operations during a critical juncture*. U.S. Patent and Trademark Office. US10120757B2.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Scholl, D. (2018). *Using tombstone objects to synchronize deletes*. U.S. Patent and Trademark Office. US20180107728A1.

- Gray, A., Leggette, W., & Resch, J. (2018). *Large object parallel writing*. U.S. Patent and Trademark Office. US10114697B2.

- Gray, A., Motwani, M., Khadiwala, R., Resch, J., & Vedpathak, Y. (2018). *Topology aware computing device to reduce network latency*. U.S. Patent and Trademark Office. US20200145511A1.

- Dhuse, G., Leggette, W., Gray, A., Volvovski, I., & Baptist, A. (2017). *Retrieving data utilizing a distributed index*. U.S. Patent and Trademark Office. US9715504B2.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Scholl, D. (2017a). *Handling failures when synchronizing objects during a write operation*. U.S. Patent and Trademark Office. US20180101451A1.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Scholl, D. (2017b). *Listing types in a distributed storage system*. U.S. Patent and Trademark Office. US20180101434A1.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Scholl, D. (2017c). *Synchronizing storage of data copies in a dispersed storage network*. U.S. Patent and Trademark Office. US9727427B2.

- Gray, A., Dhuse, G., Baptist, A., Khadiwala, R., Leggette, W., Horan, S., … Abhijeet, K. (2017). *Vault redundancy reduction within a dispersed storage network*. U.S. Patent and Trademark Office. US20180107535A1.

- Gray, A., & Resch, J. (2017). *Resolving write request conflicts in a dispersed storage network*. U.S. Patent and Trademark Office. US9817611B2.

- Borich, F. [Franco], Gray, A., Horan, S., Khadiwala, R., Li, M., Motwani, M., … Vossberg, T. (2016). *Monitoring and sharing registry states*. U.S. Patent and Trademark Office. US20190146690A1.

- Dhuse, G., & Gray, A. (2016). *Efficient updates within a dispersed storage network*. U.S. Patent and Trademark Office. US20170374148A1.

- Dhuse, G., Gray, A., Horan, S., Khadiwala, R., Reid, T., Resch, J., … Volvovski, I. (2016). *Utilizing a hierarchical index in a dispersed storage network*. U.S. Patent and Trademark Office. US20170212925A1.

- Dhuse, G., Volvovski, I., Gray, A., & Baptist, A. (2016). *Retrieving indexed data from a dispersed storage network*. U.S. Patent and Trademark Office. US9465861B2.

- Clifone, B., Gray, A., Horan, S., Leggette, W., Resch, J., Shree, S., & Volvovski, I. (2015). *Determining byte-hours usage of a vault or by users*. U.S. Patent and Trademark Office. US20170192698A1.

- Dhuse, G., Leggette, W., Gray, A., Volvovski, I., Baptist, A., & Resch, J. (2015). *Merging index nodes of a hierarchical dispersed storage index*. U.S. Patent and Trademark Office. US9171031B2.