**CS595 – Initial Paper Proposal**

* **Paper Topic:** Research NoSQL Database Security (between Cassandra and HBASE)
* **Paper subject area:** Compare and evaluate security between Cassandra and HBASE

**Abstract**

NoSQL systems store and manage data in ways that allow for high operational speed and great flexibility on the part of the developers. It can be scaled horizontally across hundreds or thousands of servers. NoSQL encloses a wide variety of different database technologies that were developed in response to the demands presented in building modern applications.

Currently, NoSQL databases are in the evolutionary stage of their lifecycle and the attack vectors for NoSQL databases aren’t well mapped out. It is likely that new attack vectors may emerge in future that will target NoSQL data stores in new ways. NoSQL has not been designed with security as a priority, so developers or security teams need to add a security layer to their organization’s [NoSQL applications](https://www.computerweekly.com/feature/Big-data-applications-bring-new-database-choices-challenges).

Few of the application that is being widely used as NoSQL database are Cassandra and HBase. Cassandra offers capabilities that NoSQL databases simply cannot match such as continuous availability, linear scale performance, operational simplicity and easy data distribution across multiple data centers and cloud availability zones. HBase is an open source NoSQL database that handle huge data sets with billions of rows and millions of columns, and it easily combines data sources that use a wide variety of different structures and schemas.

Cassandra provides security in the form of: 1. authentication and authorization, and 2. inter-node + client-to-node encryption. HBase provides the much-needed means for secure communication with other technologies it relies upon.

This paper will include details that will help you in enhancing your knowledge about security in HBase and Cassandra.

* **Reference resources:**
  + <https://data-flair.training/blogs/hbase-vs-cassandra/>
  + <https://db-engines.com/en/system/Cassandra%3BHBase>
  + <https://www.ibm.com/analytics/hadoop/hbase>