Input available to all agents:

This consists of all data that will exist in the data set. Each category of data will be organized into a useable format. This format will need to be determined.

* Content - Tweet corpus
* Creator - User who created a tweet
* Hashtag - Hashtag(s) associated with a tweet
* Location - Location a tweet was created/posted from
* Time - Time a tweet was created/posted
* FriendList - Users who friends with a given user

Data Generated by Agents

* TweetTopic – The topic of a given tweet
* TweetTopicProbability – The confidence that a TweetTopic is correct
* GroudIdentifier – A unique identifier for a group of users.
* RecoveredHashtag – A recovered hashtag

Agent 1 – Paper Emulator:

This agent recovers a deleted hashtag using an approach similar to the selected paper.

* Input: <Hashtag, location>
* Output: Recovered hashtags
* Lambda Calculus Statement(s):  
  RecoverHashtag(Hashtag, location)

Agent 2 – Topic Assigner:

This agent determines the topic of a tweet from the tweet’s content.

* Input: {Tweet corpus}
* Output: Topics of a tweet and a probability of correctness
* Lambda Calculus Statement(s)
  + DetermineTopic(Corpus)
  + DetermineTopic(Corpus, {hashtag})

Agent 3 – User Analyzer

This agent learns and reports the behaviors of twitter users.

* Input: {User, [Topics], [Time], hashtag}
* Output: Various metrics relating to user behavior and content created by a user.
* Lambda Calculus Statement(s)
  + CommonTopics(User)
  + CommonTopicsAtTime(User, time)
  + FrequentPostTimes(User)
  + CommonHashtags(User)
  + CommonHashtags(User, time)

Agent 4 – User Group Analyzer

This agent analyzes and reports the behaviors of a group of twitter users.

* Input: {User, [Friends]}
* Output: User clusters and various metrics relating to user clusters.
* Lambda Calculus Statement(s):
  + GenerateUserGroups([Users]
  + CommonTopics(GroupIdentifier)
  + CommonTopicsAtTime(GroupIdentifier, time)
  + CommonHashtags(GroupIdentifier)
  + CommonHashtags(GroupIdentifier, time)

Agent 5 – Author Recoverer   
This agent attempts to determine the author/creator of a tweet from available information and information from other agents.

* Input: {Content, [hashtags], location, time}
* Output: The recovered author of a tweet.
* Lambda Calculus Statemets(s):
  + DetermineAuthor(Content, hashtag, location, time)

Agent 6 – Topic Recoverer

This agent attempts to determine the topic of a deleted tweet from available information and information from other agents.

* Input: {User, [hashtags], location, time}
* Output: The recovered topic of a tweet.
* Lambda Calculus Statement(s):
  + DetermineTopic( User, [hashtags], location, time)