



Friend book: A Semantic-based Friend Recommendation System for Social Networks

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Abstract — Obtainable communal network armed forces advocate associates to user base on top of their community graph, which might not live the nearly everyone suitable to reproduce a user's preference lying on companion collection during authentic life. In this project, we in attendance **Friend book**, a work of fiction semantic-based companion suggestion organization for community network, which recommend associates to user base on their existence style in its place of communal graph. By captivating benefit of sensor-rich smart phones, Friend book discover existence style of user from user-centric antenna information, events the resemblance of existence style pack in between users, and recommend associates to user stipulation their existence style contain far above the ground resemblance.

Keywords- Microblogging, Latent Dirichlet allocation (LDA, CF-Based, Content-Based Hybrid Recommendation Systems.

I. INTRODUCTION

This difficulty give go up to advice scheme [RS]. A recommender scheme is a personalization organization so as to helps user to locate substance of notice base on their preference. Recommender system be resourceful equipment that trounce the in sequence overwork problem by given with the intention of user by way of the most proper inside. The end result of surroundings in string have be predictable by researchers and practitioners inside a lot of discipline together with Ecommerce, made to order IR, ever-present and mobile compute, data mining, marketing and management. There are many obtainable e-commerce websites which have implemented recommendation systems successfully. We will discuss few website in our coming section that provides recommendation. Items are suggested by looking at the behavior of like-minded-users. Group be shaped of such user, and substance favored through such group be optional in the direction of the consumer whose taste and performance is alike to the collection. Inside our replica we contain included consumer preference obtain as of communal network place.

II. LITERATURE REVIEW

Paper Name: Friend book: A Semantic-Based Friend Recommendation System for Social Networks.

Author: Zhibo Wang, Jilong Liao, Qing Cao, and Zhi Wang

Introduce plan and completion of Friend book which is dissimilar as of other friend proposal mechanisms relying on community graph in accessible community network services, Friend book extract time styles on or after user-centric information mutually as of sensors on the Smartphone and optional probable associates to user condition they contribute to comparable time style.

Advantages: 1) habits or life style 2) Ethical standards 3) Economic leve4) Individuals they already know.

Disadvantages: There was an increased likelihood for competence and high self-efficiency that they were already "early adopters" of technology.

Paper Name: Understanding Transportation Modes Based on GPS Data for Web Applications

Author: Y. Zheng, Y. Chen, Q. Li, X. Xie, and W.-Y. Ma.

An move toward base on top of supervise knowledge to mechanically deduce users' transport modes, counting pouring, on foot, captivating a means of transportation and riding a bike, as of raw GPS wood.

Advantages: 1) Easy to use. 2) Users can access the web portal to create the learning trail anywhere using any platform

Disadvantages: 1) highly costly. 2) Complex to implement as it required datasets.

Paper Name: A Probabilistic Approach to Mining Mobile Phone Data Sequences

Author: Katayoun Farrahi

In the direction of address the multifaceted information taking out from large information of great succession, novelist future an unverified probabilistic theme replica called the remote n-gram subject model. The DNTM is based on Latent Dirichlet Allocation (LDA), which is complete in the direction of incorporate chronological in order

Advantages: 1) Fostering a sense of security in the online e-learning environment.

Disadvantages: Security and privacy issues in online environments. Lot of effort to determine the significance of security.

Paper Name: Discovering Routines from Large-Scale Human locations using Probabilistic Topic Models.

Author: Katayoun Farrahi

In this effort we find out the everyday location-driven routine which is restricted in an enormous real-life person dataset composed by movable phone. Novelist urbanized an unverified method base on top of two conflicting probabilistic subject model and apply them to the everyday being of consumer movable phone.

Advantages: application of adaptive online system.

Disadvantages: Database design is difficult in such systems and requires much time to implements.

Paper Name: Latent Dirichlet Allocation

Author: David M. Blei

We describe *latent Dirichlet allocation* (LDA), a generative probabilistic model for collections of discrete data such as text corpora. LDA is a three-level hierarchical Bayesian model, in which each item of a collection is modeled as a finite mixture over an underlying set of topics. Each topic is, in turn, modeled as an infinite mixture over an underlying set of topic probabilities. In the context of text modeling, the topic probabilities provide an explicit representation of a document. We present efficient approximate inference techniques based on variation methods and an EM algorithm for empirical Bayes parameter estimation.

Advantages: We are also able to characterize daily patterns by determining the topic structure of days in addition to determining whether certain routines.

Disadvantages: we analyze an individual's routines over time to determine regions with high variations, which may correspond to specific events.

Paper Name: Incremental Page Rank Computation on Evolving Graphs

Author: Prasanna Desikan

In this paper, we propose a method to incrementally compute Pagerank for a large graph that is evolving. Our approach is quite general, and can be used to incrementally compute (on evolving graphs) any metric that satisfies the first order Markov property.

Advantages: They are advantageous to activity modeling tasks due to their ability to effectively characterize discrete data represented by bags.

Disadvantages: We devise a novel bag representation of a day of the life of a mobile phone user which captures fine-grain and coarse-grain times as well as transitions in locations over time.

III. PROPOSED SYSTEM

In this document, we obtainable the plan and completion of Friend book, a semantic-based pal proposal system for community network. dissimilar as of the buddy proposal mechanism relying on common graph in on hand social network armed forces, Friend book extract existence style on or after user-centric statistics unruffled on or after sensors resting on the Smartphone and optional budding associates to user if they divide up similar life styles .We implement Friend book on the Android-based smart- phones, and evaluated its performance on both small- scale experiments and large-scale simulations. The results showed that the recommendations accurately reflect the preferences of users in choosing friends. Beyond the current prototype, the future work can be fourfold. First, we would like to evaluate our system on large-scale field experiments. Second, we mean in the direction of put into practice the existence method removal using LDA and the iterative matrix-vector increase technique in customer impact ranking incrementally, so that Friend book would exist scalable to major system.

Advantageous of proposed system

1. Its effective recommendation system for recommending friends to user.
2. It takes less time attributable to the effectiveness of LDA rule.

IV. SYSTEM ARCHITECTURE

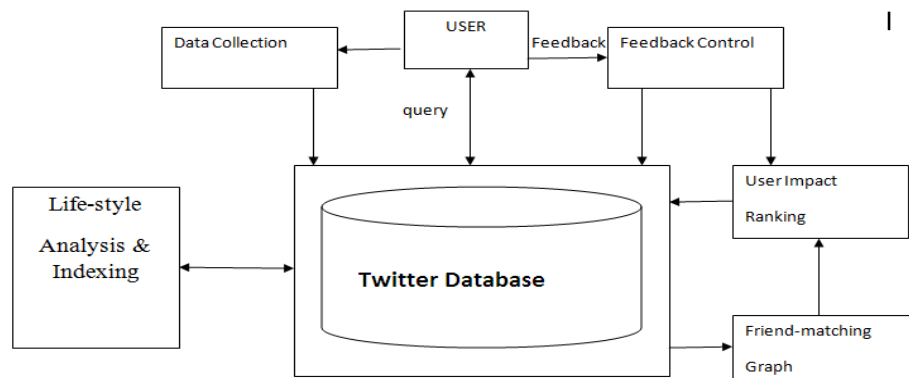


fig: Recommended System Architecture

V MATHEMATICAL MODEL

Let W be the whole system which consists:

$W = \{U, W, N_u, N_w, t, T, \beta, \alpha, \theta, \gamma, \delta, I, n, w, S, M\}$.

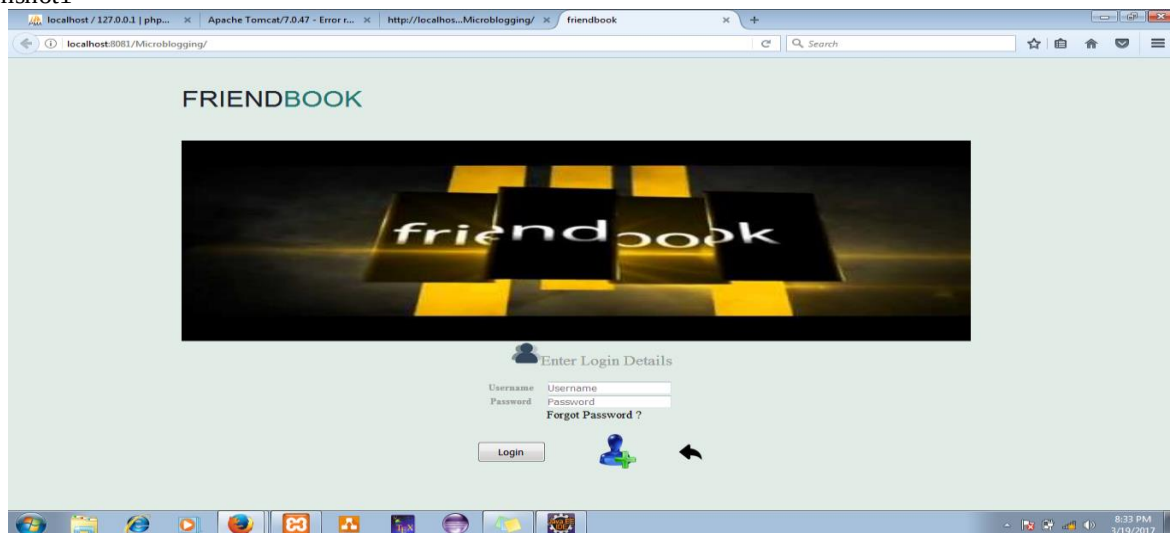
Where,

1. U is the set of user.
2. W is the set of keywords.
3. N_u is the set of total number of user.
4. N_w is the set of total number of keywords.
5. t is the time interval.
6. $N_w^u(t)$ Is the total number of keywords of user u at time t .

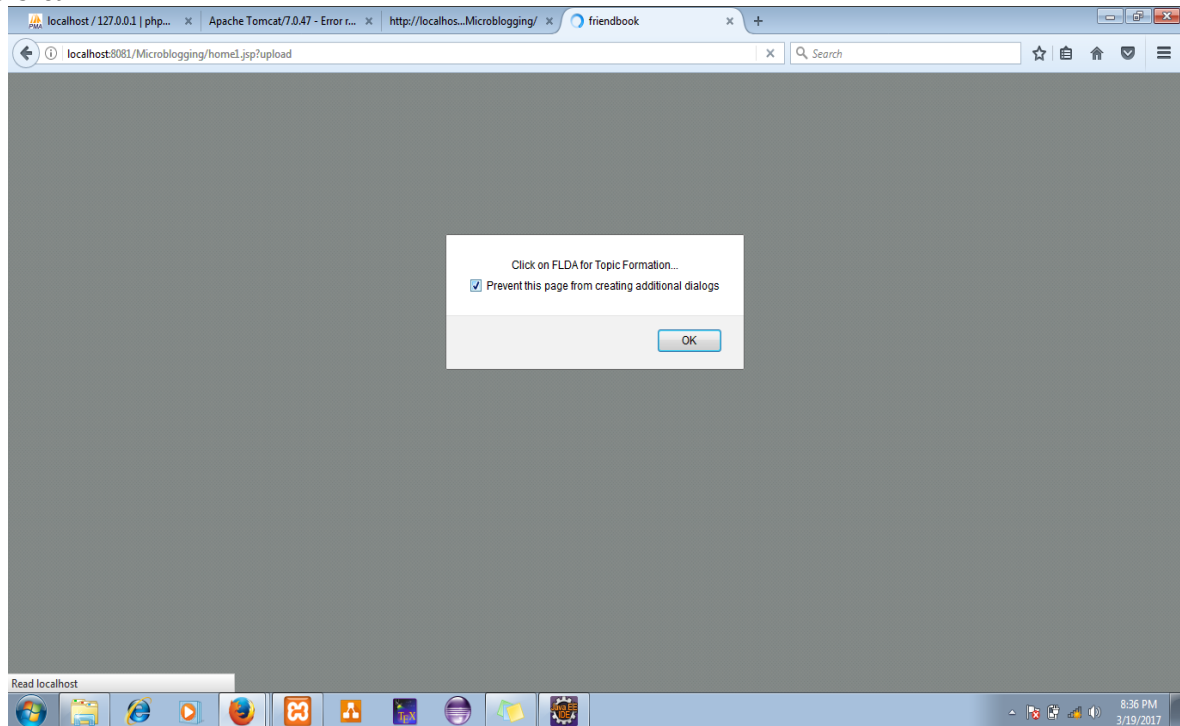
7. T is the set of number of topics.
8. n is the total number of time intervals.
9. β is the Dirichlet prior for user.
10. α is the Dirichlet prior for user
11. α^t is the Dirichlet prior for users at time t .
12. β^t is the Dirichlet prior for hidden topics at time t .
13. γ is the kernel parameter in the exponential decay function.
14. δ is the size of time interval.
15. w_i^t Is the unique word associated with the i -th token of users at time t .
16. z_i^t is the topic associated with w_i^t .
17. θ is the multinomial distribution of particular topic.
18. $\theta_u(t)$ is the multinomial distribution topic specific to the user u at time t .
19. $\theta_z(t)$ is the multinomial distribution words specific to the topic z at time t .
20. S be the similarity matrix.
21. S_t is the users topical similarity matrix at time t .
22. I is the number of iterations in LDA model.
23. M is the keyword matrix.
24. M_t be the users keyword matrix at time t

VII.RESULT ANALYSIS

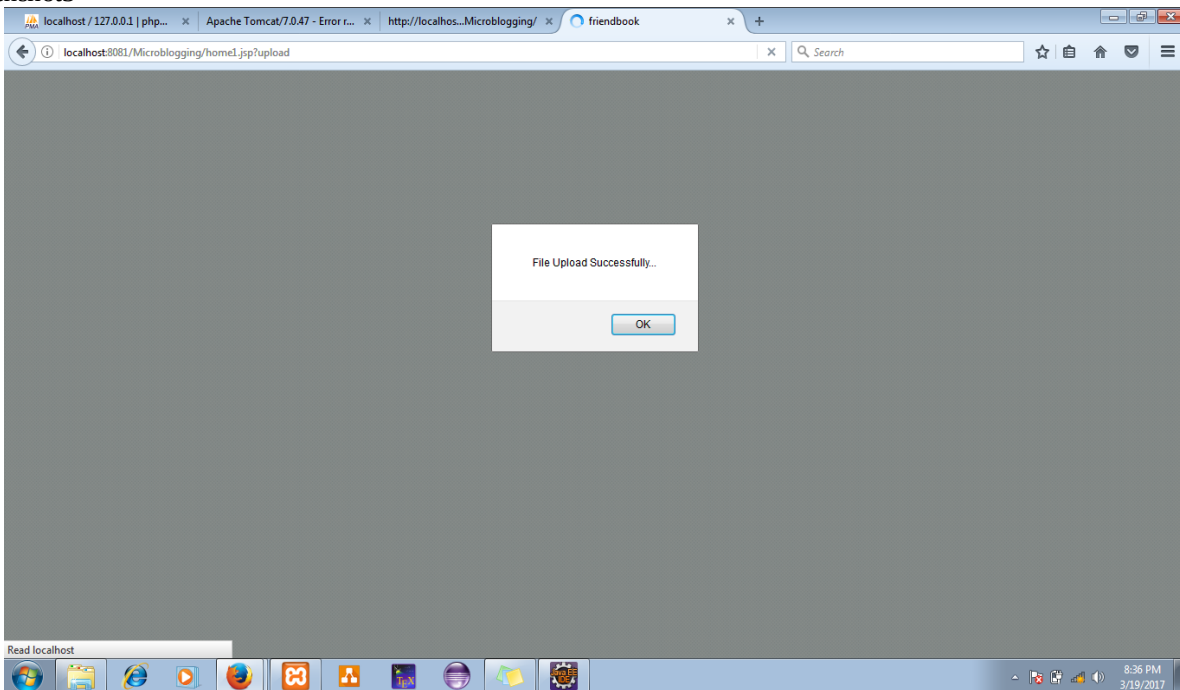
Screenshot1



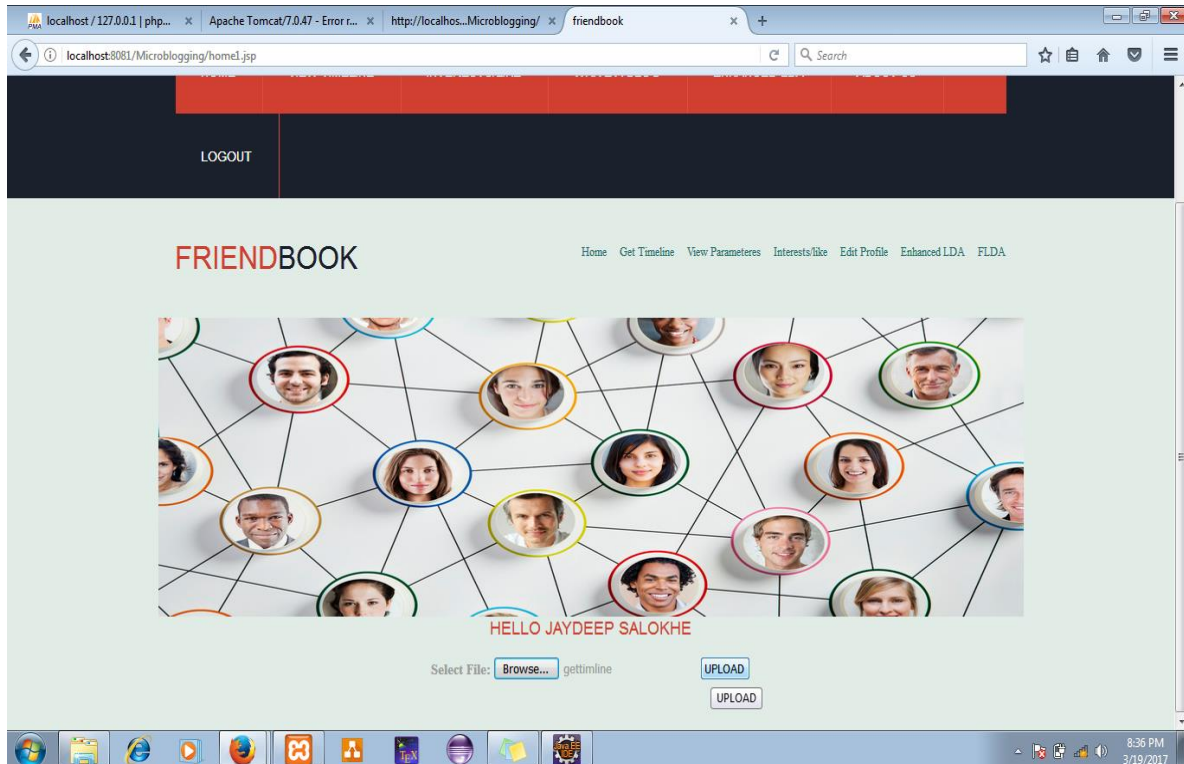
Screenshot2



Screenshot3



Screenshot4



Screenshot5



IX.CONCLUSION

We future a semantic-based companion advice system intended for communal network call “Friend book”. Different, the additional companion proposal organization which is depending lying on communal graphs in networking services but proposed Friend book will extract life styles from user-centric data collected from sensors on top of the users Smartphone and recommended potential friends to users if they share similar life styles. We implemented Friend book on the Android-based Smart phone’s, and evaluate its presentation on top of both small scale experiment and major simulations. Our results show that the recommendation is precisely reproduces the preference of user in choose associates further than the current example.

The prospect labor is able to be four-fold. At first, we would like to evaluate our system on large-scale field experiments. Second, we mean in the direction of put into practice the existence method removal by LDA and the iterative matrix-vector increase technique inside consumer impact ranking incrementally, so that Friend book would be scalable to large-scale systems.

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REFERENCES

- [1] F.-Y. Wang, "Toward a paradigm shift in social computing: The ACP approach," *IEEE Intell. Syst.*, vol. 22, no. 5, pp. 65–67, Sep./Oct. 2007.
- [2] F.-Y. Wang, K. M. Carley, D. Zeng, and W. Mao, "Social computing: From social informatics to social intelligence," *IEEE Intell. Syst.*, vol. 22, no. 2, pp. 79–83, Mar./Apr. 2007.
- [3] C. L. P. Chen and C. Y. Zhang, "Data-intensive applications, challenges, techniques and technologies: A survey on big data," *Inf. Sci.*, vol. 275, pp. 314–347, Aug. 2014.
- [4] M. Moricz, Y. Dosbayev, and M. Berlyant, "PYMK: Friend recommendation at myspace," in *Proc. ACM SIGMOD Int. Conf. Manage. Data.*, Indianapolis, IN, USA, 2010, pp. 999–1002.
- [5] L. Hong and B. D. Davison, "Empirical study of topic modeling in Twitter," in *Proc. 1st Workshop Soc. Media Anal.*, Washington, DC, USA, 2010, pp. 80–88.
- [6] D. Ramage, S. Dumais, and D. Liebling, "Characterizing microblogs with topic models," in *Proc. Int. AAAI Conf. Weblogs Soc. Media*, Menlo Park, CA, USA, 2010, pp. 130–137.