**KDD Tutorial 2016 Proposal**

**Hudup – A Framework of E-commercial Recommendation Algorithms**

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| *Sending with full of respect*: | KDD Tutorial 2016 Organization Committee |
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**Abstract**

I am Loc Nguyen, founder of Sunflower Soft Company, who submit a proposal of “*Hudup – A Framework of E-commercial Recommendation Algorithms*” to KDD Tutorial 2016. Recommendation algorithm is very important to e-commercial websites when it can provide favorite products to online customers, which results out an increase in sale revenue. I propose the infrastructure for e-commercial recommendation solutions. It is a middleware framework of e-commercial recommendation software, which supports scientists and software developers to build up their own recommendation algorithms with low cost, high achievement and fast speed. The description of proposed framework is published in [American Journal of Computer Science and Information Engineering – American Association for Science and Technology (AASCIT)](http://www.aascit.org/journal/archive2?journalId=912&paperId=1894). The framework is also accepted in [European Project Space – Institute for Systems and Technologies of Information, Control and Communication (INSTICC)](http://www.ic3k.org/EuropeanProjectSpace.aspx). Here I would like to make a tutorial which helps scientists to comprehend and use the framework for their own researches. The trial product is available at <http://www.locnguyen.net/st/products/hudup>. This tutorial is extracted from the book chapter, the full description of Hudup, which is published in INSTICC.

**Target audience and prerequisites**

Audiences should be researchers who are interested in recommendation field. Software developers are welcome in warm. The framework supports scientists to do researches in recommendation study; besides it aims to propose standards for recommendation area. These standards are abstract components (programming interfaces) built in Hudup, which achieve two goals coherency and flexibility. By taking advantages of Hudup, scientists in KDD community only focus on their ideas and they are free from complicated models, structures, and data. Hudup is easy to use and this tutorial is very simple. So I assure that researchers can enjoy Hudup right after they participate the tutorial. I am very honorable and happy when contributing useful works to KDD community. Moreover KDD community focuses on discovering knowledge from data. Although Hudup does not go beyond KDD’s mission, the framework of recommendation study enriches the large domain of knowledge discovery because recommendation system shares interests with knowledge discovery but it is not embedded in knowledge discovery. If KDD community accepts proposed standards, KDD community will be enlarged with more topics when recommendation, personalization, and ubiquitous computing are hot topics in computer science. This enlargement will attract much more researchers.

**Outline of the tutorial**

The product provides infrastructure for e-commercial recommendation solutions, named **Hudup**. This is a middleware framework of e-commercial recommendation software, which supports scientists and software developers to build up their own recommendation solutions. The term “recommendation solution” refers to computer algorithm that introduces online customer a list of items such as books, products, services, news papers, and fashion clothes on e-commercial websites with expectation that customer will like these recommended items. The goal of recommendation algorithm is to gain high sale revenue.

You need to develop a recommendation solution for online-sale website. You, a scientist, invent a new algorithm after researching many years. Your solution is excellent and very useful and so you are very excited but:

* You cope with complicated computations when analyzing big data and there are a variety of heterogeneous models in recommendation study.
* It is impossible for you to evaluate your algorithm according to standard metrics.
* There is no simulation environment or simulator for you to test feasibility of your algorithm.

The innovative product Hudup supports you to solve perfectly three difficulties above and so following are your achievements: 1) Realizing your solution is very fast and easy. 2) Evaluating your solution according to standard metrics by the best way. 3) Determining feasibility of your algorithm in real-time applications. Hudup aims to help you, a scientist or software developer, to solve three core problems above. Hudup proposes three solution stages for developing a recommendation algorithm.

* *Base stage* builds up algorithm model and data model to help you to create new software with lowest cost.
* *Evaluation stage* builds up evaluation metrics and algorithm evaluator to help you to assess your own algorithm.
* *Simulation stage* builds up recommendation server (simulator), which helps you to test feasibility of your algorithm.

Therefore, the tutorial aims to help scientists to comprehend Hudup first and apply it into their researches second. The tutorial includes 3 sections:

1. The first section “*General Description*” introduces features of Hudup such as its purposes, general architectures, and similar products.
2. The second section “*Core Classes and Interfaces*” focuses on describing internal programming classes and interfaces of Hudup according to viewpoint of software engineering. This section is very important for software developers who are willing to use and improve Hudup.
3. The third section “*Tutorial on Proposed Framework*” is the guidance which helps scientists how to implement, evaluate, and deploy their algorithm based on Hudup according to three aforementioned stages (base stage, evaluation stage, simulation stage).

**Tutor’s short biography**

Loc Nguyen is a Director at Sunflower Soft Company, Vietnam. Currently, he is interested in computer science, statistics, and mathematics. He serves as reviewer and editor in a wide range of international journals and conferences. Now he is a volunteer of Statistics Without Borders of American Statistics Association. He hold a Postdoctoral degree in Computer Science, certified by Institute for Systems and Technologies of Information, Control and Communication (INSTICC). He has published 39 papers in journals, books and conference proceedings. He is author of 2 books. He is author and creator of 8 scientific and technology products. Moreover, he is Vietnamese poet who composed 1 verse story and 5 collections of 240 poems. He also has 2 music albums in which many poems are chanted by famous artists.

**Important references**

* Nguyen, L. (2015, September 28). Introduction to A Framework of E-commercial Recommendation Algorithms. (A. e. Shabayek et al., Eds.) American Journal of Computer Science and Information Engineering (AJCSIE), 2(4), 33-44. Retrieved from

<http://www.aascit.org/journal/archive2?journalId=912&paperId=1894>

* Project is accepted in European Project Space:

<http://www.ic3k.org/EuropeanProjectSpace.aspx>

**Optional URL (s)**

* The homepage of Hudup is <http://www.locnguyen.net/st/products/hudup>
* The trial version is available at <https://goo.gl/nk0tsJ>
* The demonstration video is available at <https://goo.gl/89Rc1m>

Best regards,

Loc Nguyen