

Meghanath Macha Yadagiri

INFO

JOB & POSITION: Member of Research Staff at Big Data Experience Lab, Adobe, India.
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LANGUAGES: Hindi, English and Telugu.

EDUCATION

JULY 2014 Masters and Bachelors of Science in MATHEMATICS AND COMPUTING
Indian Institute of Technology, Kharagpur , India
INSTITUTE SILVER MEDALIST
GPA: 8.66/10

RESEARCH PUBLICATIONS AND PATENTS

ACCEPTED PUBLICATIONS :

1. Yadagiri, Meghanath Macha, Shiv Kumar Saini, and Ritwik Sinha. **“A Non-parametric Approach to the Multi-channel Attribution Problem”** In *Web Information Systems Engineering–WISE 2015*, pp. 338-352. Springer International Publishing, 2015.
2. Deepak Pai, Abhijit Sharang, Meghanath Macha Yadagiri, and Shradha Agrawal. **“Modelling visit similarity using click-stream data: A supervised approach.”** In *Web Information Systems Engineering–WISE 2014*, pp. 135-145. Springer International Publishing, 2014.

SUBMITTED / WORKING PAPERS:

1. Meghanath Macha Yadagiri, Ritesh Noothigattu, Shivam Garg, Abhishek Kandoi, Dr.Atanu Sinha and Dr.Ritwik Sinha. **“Latent multi-stage purchase funnel approach to predict behavior in next online session.”** Communicated to *World Wide Web 2016*
2. Meghanath Macha Yadagiri, Ritwik Sinha and Shiv Kumar Saini. **“An evaluation framework for Multi-channel attribution”** *Working paper*

PATENTS:

1. Deepak Pai , Abhijit Sharang , Meghanath Macha Yadagiri , Shradha Agrawal **“Visitor session classification based on clickstreams”** - SLW Ref. 2055.474US1. (Filed)
2. Meghanath Macha Yadagiri, Shiv Kumar Saini, Ritwik Sinha **“A non-parametric approach to multi-channel attribution using Shapley Value”** (Filed)
3. Meghanath Macha Yadagiri, Ritesh Noothigattu, Shivam Garg, Abhishek Kandoi, Dr.Atanu Sinha **“A method to find the stages of a customer’s buying cycle in e-commerce website.”** (Filed)
4. Meghanath Macha Yadagiri, Ritwik Sinha, Shiv Kumar Saini. **“A simulation engine to evaluate and compare algorithmic multi-channel attribution models.”** (To be filed)

PRESENTATIONS

1. *Presenter: Learning online session similarities*, Adobe Tech Summit, San Francisco, 2015
2. *Lab Instructor: From Data to Insights*, Adobe Marketing Summit, Salt Lake City, 2015.
3. *Presenter: Modelling visit similarity using click-stream data: A supervised approach*, 15th International Conference on Web Information and System Engineering (*WISE*) 2014, Thessaloniki, Greece.

AWARDS

1. **Institute Silver Medal** for holding the highest GPA in my Department during the period 2009-14.
2. **Professor K.L. Chopra award** for the best demonstrable Master's project in the 2013-14 session.

SELECTED RESEARCH PROJECTS

<i>Organisation</i> <i>June 2014- Present</i>	<i>Big Data Experience Labs, Adobe, India</i> NON-PARAMETRIC ESTIMATION OF MULTI-CHANNEL ATTRIBUTION. ABSTRACT The problem of interpreting the influence of various marketing channels to the user's decision process is called marketing attribution. Multi-channel marketing attribution modeling is a two-stage process. In the first stage, the value of exposure from different marketing channels needs to be estimated. In the second stage, the total surplus achieved needs to be assigned to individual marketing channels by using the exposure effects from the first stage. In this work, we propose a novel non-parametric and a semi-parametric approach to estimate the value function and compare it with other natural choices. We build a simulation engine that captures important behavioral phenomenon known to affect a customer's purchase decision; and compare the performance of five attribution approaches in their ability to closely approximate the known ground truth . Our proposed method works well when marketing channels have high levels of synergy. We apply the proposed approaches on two real-world datasets and present the results. COLLABORATORS This work was primarily driven by me along with Dr.Shiv Kumar Saini and Dr.Ritwik Sinha .The work has been accepted as a regular paper in <i>WISE 2015</i> .
<i>June 2014- Present</i>	EVALUATION FRAMEWORK FOR MULTI-CHANNEL ATTRIBUTION ABSTRACT All the algorithmic multi-channel attribution models aim to formalize an answer to the credit assignment problem, but a natural question to ask is which of these is better, or which of these gives a more correct answer. No academic literature has thus far explored this question. In this work, we extend the simulation engine proposed in the above work to evaluate and compare multiple attribution models. The simulation engine incorporates multiple traits customers and marketer exhibit in the real world. We present two metrics to calculate the accuracy of the attribution models. For comparison, we calculate the true attributions from the simulation engine and contrast it with the attributions of various models. COLLABORATORS I was the primary driver of this project and collaborated mainly with Dr.Ritwik Sinha . We are currently working on a research paper for the same. We have an an <i>R</i> language package for the simulation engine and are planning to submit it to <i>CRAN</i>
<i>June 2014- Present</i>	BEHAVIOR OF A CUSTOMER IN THE NEXT ONLINE SESSION : A CONVERSION FUNNEL APPROACH. ABSTRACT A marketer would like to predict the behavior of a customer in the next online session. Such predictions would help the marketer understand the expectations of the customer and strategize future targeting activities. On an e-commerce website, the expectations of a customer could vary depending on the previous interactions (browsing sessions) on the website. In this work, while making predictions, we capture the customer's stage in the conversion funnel. The stages were modeled as latent states of a non-homogeneous hidden markov model. We provide a framework to predict the average number of page views and conversions of a customer in the next online session based on the referrer of the landing page. The proposed method is applied on two real world datasets. We observe significant improvements over the current prediction models by incorporating the stage of a customer in the conversion funnel. COLLABORATORS I mentored a group of three interns for this project and was the primary contributor. I also collaborated with Professor Atanu Sinha . The work will be submitted to <i>WWW 2016</i> .
<i>May-June 2013</i>	VISITOR CLASSIFICATION USING CLICKSTREAM ABSTRACT Identifying and targeting visitors on e-commerce website with personalized content in real-time is important to marketers. In this work, we show that dynamic visitor attributes extracted from their click-stream provide much better predictive capabilities of visitor intent to make a purchase on an e-commerce website. We propose a mechanism for identifying similar visitor sessions on a website based on their click-streams. Novel techniques for extracting features from visitor clicks are employed. Large margin nearest neighbor (LMNN) algorithm is used to learn a similarity metric between any two sessions. Further the sessions are classified into purchasers and non-purchasers using k-nearest neighbor (kNN) classification. Experimental results showing significant improvements over baseline algorithms based on Hidden Markov Model (HMM), support vector machine (SVM) and random forest are presented on two large real-world data sets.

COLLABORATORS This work was done as a part of my summer internship at Adobe. I was one of the primary contributors to the project and was mentored by **Mr. Deepak Pai**. The work has been accepted at *WISE 2014*.

Organisation
July-June 2013

Indian Institute of Technology, Kharagpur, India

CLUSTERING OF VISITORS BASED ON THE CLICK SEQUENCE

Under the guidance of **Professor Somesh Kumar**, I worked on grouping the visitor sessions of an online website in an unsupervised manner. I devised features to capture the sequence of the clicks of a visitor in an online session and their specificity towards a particular brand or products offered on a commercial website. I applied existing unsupervised clustering techniques to identify groups of similar behavior. Further, I created a java applet which could input clickstreams of visitors, cluster and visualize them. I received **K.L. Chopra Best demonstrable M.Sc. project award** for the 2013-14 session for this project.

TEACHING AND RESPONSIBILITIES

INTERNSHIP MENTOR

Mentored a group of three students at Adobe over the summer of 2015 on a research project.

LAB INSTRUCTOR

Conducted a technical lab "From Data to insights" at Adobe Marketing Summit, Salt Lake City, 2015.

HALL PRESIDENT

Presided over all the hostel activities of over 250 students during my undergraduate years.

GENERAL SECRETARY TECHNOLOGY

Organized and presided various technological events at IIT Kharagpur.

RELEVANT COURSES

COMPUTER SCIENCE

Design and Analysis of Algorithms
Foundations of Computing
Theory of Compilers
Computer Organization and Architecture
System Programming

Object Oriented System Design
Graph Theory
Operating Systems
Database Management Systems
Programming and Data Structures

MATHEMATICS

Probability and Statistics
Linear Algebra

Stochastic Processes
Discrete Mathematics

REFERENCES

Ritwik Sinha

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Adobe Systems
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Shiv Kumar Saini

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Deepak Pai

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