

Thesis proposal: modeling and simulation of customer behavior

About Smartr

Smartr is an expert bureau within data and AI. We work with the entire value chain from data strategy, research, algorithm development, prototyping, validation, software development and data engineering. We have a high level of seniority and we work close to academia. Supervising students at different levels gives us a great opportunity to develop unique skills but also serves as a base for recruitment. We intend to supervise three projects 2020.

Thesis project

When a customer signs up for a membership in a retail company we say that the customer journey begins. The company wants satisfied, loyal and long-lasting customers. Using data wisely the company can improve the customer experience for the benefit of the customer and for the long-term profit of the company. For some customers this mean sparse contact and every directed campaign means a negative customer experience. Others appreciate more direct communication and an individualized campaign has a good chance of improving the customer experience. If the customer actions can be simulated realistically, based on campaigns and customer data, then the company is in a good situation to optimize its communication towards the customer in order to maximize customer experience and increase competitiveness. This project concerns Generative Adversarial Imitation Learning (GAIL) for learning the customer consumption behavior. There are several design choices in the modelling that the students to explore and evaluate. The question how to represent customers and what history to use is central. In this thesis we want the students to evaluate the methodology on simulated data. Simulation models will be provided but the students can consider other models with varying types of campaigns and customer representations with different complexity.

We seek 1-2 students for this project. The students are expected to have a great interest in deep learning and be familiar with different type of problems and models. Practical experience with databases, model training and validation in TensorFlow or PyTorch are expected. Daytime the thesis work is mainly to be committed at Smartr's office at Vallgatan 3.

Supervisors

Supervisor at Smartr is Adam Andersson (adam.andersson@smartr.se) and supervisor at Chalmers is Lennart Svensson (lennart.svensson@chalmers.se). The student can expect an active and interactive supervision.

Contact and application

A complete application contains CV, personal letter and transcripts from university. Please send it to Adam and feel free to ask any questions about the project to Adam or Lennart.