### Twilm

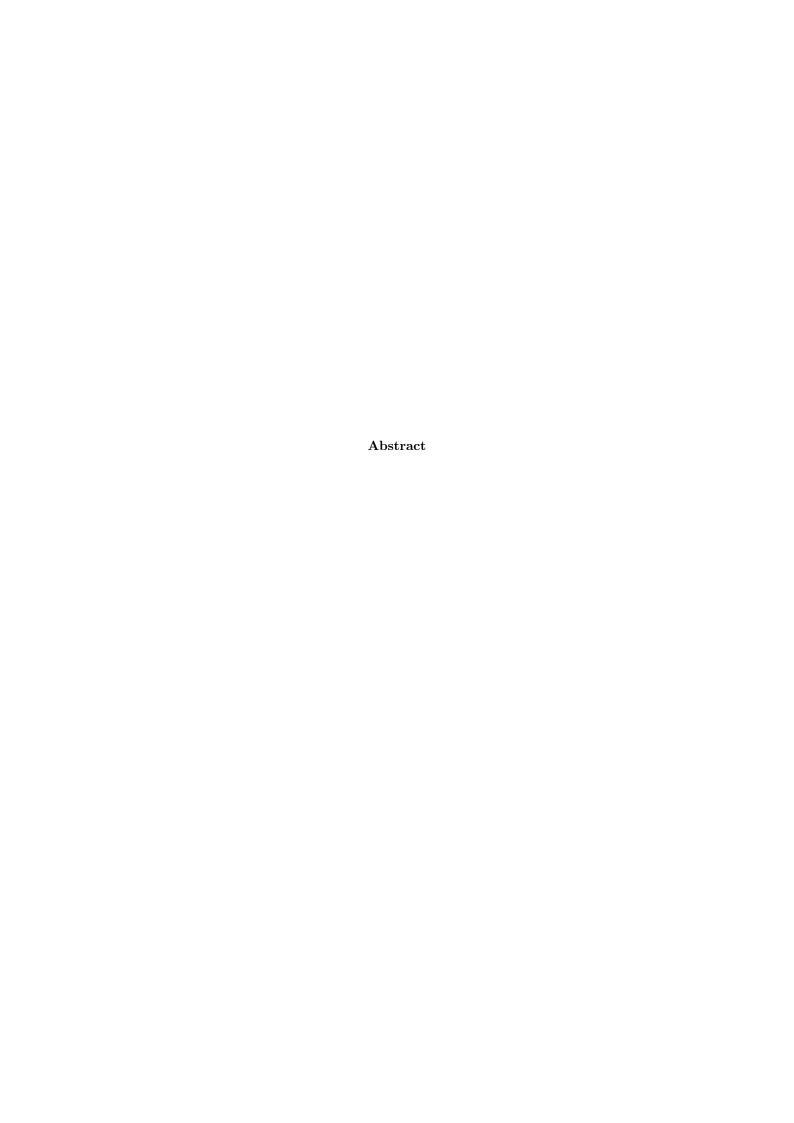
### **PROJECT**

### ONELINER ABOUT

Authors
Martin Christian HAVIG

Supervisor: Some One





### Contents

1	Intr	oduction	1
	1.1	Purpose	2
	1.2	Motivation	2
	1.3	Context	2
2	Pre	liminary Study	4
	2.1	State Of The Art	5
		2.1.1 System Coldstart Handling	5
		2.1.2 Fashion Recommendation	5
		2.1.3 Session Based Recommendation	5
		2.1.4 Recommenders (Similar systems? somethingsomething)	5
		2.1.5 Items clustering	5
	2.2	Data Findings	5
		2.2.1 What Can Be Understood From The Data	5
		2.2.2 Graphs N' Shit	6
	2.3	What to use	6
		2.3.1 Some Awesome Algorithms (Build up with project progress)	6
		2.3.2 Why Not To Use These (Same As above)	6
	2.4	How to evaluate	6
		2.4.1 What Has Been Done Before	6
		2.4.2 What To Use	6
	2.5	Evaluation	6
3	Rec	uirements	7
	3.1	Capturing the Requirements	8
	3.2	Functional Requirements	8
	3.3	Non Functional Requirements	8

CONTENTS ii

	3.4	Prioritized Requirements	8
4	Des	ign	9
	4.1	Architecture	10
		4.1.1 Logical View	10
		4.1.2 Process View	10
		4.1.3 Physical View	10
	4.2	Algorithm Design	10
		4.2.1 Prediction	10
5	Imp	lementation	11
	5.1	Major Requirements	12
		5.1.1 FR1	12
		5.1.2 FR6	12
		5.1.3 FR7	12
		5.1.4 NFR1	12
6	Eva	luation	13
	6.1	Development Process	14
	6.2	Result Evaluation	14
	6.3	Issues	14
7	Con	clusion	15
	7.1	Final Product	16
	7.2	Related Work	16
	7.3	Future Work	16
$\mathbf{A}$	Req	quirements	Ι
	A.1	Functional Requirements	Ι
	A.2	Non Functional Requirements	Ι
В	Des	ign	II
$\mathbf{C}$	Imp	elementation 1	ΙΙ
	_		III
			III
Re	efere	nces	ΙV

# List of Figures

## List of Tables

1.1	Structure and	chapters of	of the report	 	 	 3

# Introduction

Contents		
1.1	Purpose	
1.2	Motivation	
1.3	Context	

- 1.1 Purpose
- 1.2 Motivation
- 1.3 Context

Chapter	Description
Chapter 1	The Introduction chapter gives an overview of the project to the reader. It also outlines the purpose and motivation of the project.
Chapter 2	The Preliminary Study chapter documents knowledge, research and technology that is relevant to the project, and how and why some of them were prioritized over others when it comes to how they are used in the project.
Chapter 3	The Requirements chapter describes the requirements of the project. It also describes how and why they were created.
Chapter 4	The Design chapter describes the design of the system and how it was made.
Chapter 5	The Implementation chapter describes the implementation of the system.
Chapter 6	Evaluation chapter discussed the development process, testing of results and major issues.
Chapter 7	The Conclusion chapter sums up the project and describes the findings and reflects on them. It also describes further work to be done.
Appendix	The appendix contains extended information such as a full list of the requirements.

Table 1.1: Structure and chapters of the report.

# Preliminary Study

Contents			
2.1	State	e Of The Art	5
	2.1.1	System Coldstart Handling	5
	2.1.2	Fashion Recommendation	5
	2.1.3	Session Based Recommendation	5
	2.1.4	Recommenders (Similar systems? somethingsomething)	5
	2.1.5	Items clustering	5
2.2	Data	a Findings	5
	2.2.1	What Can Be Understood From The Data	5
	2.2.2	Graphs N' Shit	6
2.3	Wha	at to use	6
	2.3.1	Some Awesome Algorithms (Build up with project progress)	6
	2.3.2	Why Not To Use These (Same As above)	6
<b>2.4</b>	How	to evaluate	6
	2.4.1	What Has Been Done Before	6
	2.4.2	What To Use	6
2.5	Eval	uation	6

#### 2.1 State Of The Art

#### 2.1.1 System Coldstart Handling

#### 2.1.2 Fashion Recommendation

#### 2.1.3 Session Based Recommendation

Init Hypothesis: Two users with similar session habits and similar product accessing pattern have a stronger correlation to one-another than two users with just similar product interests.

'product\_purchase\_intended' (user pushed to the product web store) shows a wider specter of information about the product, including additional colors, images and colors. For some it might be natural to explore the item there before "wanting" it. Making both

```
"product_purchase_intended" \Rightarrow "product_wanted" and "product_purchase_intended" \Rightarrow "product_wanted" product_valued information.
```

Must make different rules for the different stores: "Bik Bok", "Cubus", "Gina Trik", "H&M", "Bianco" has a broad specter of extra functions inside the web store, whereas others might not, only shows the product and a add to chart button. This might divide the use pattern of the users into a:

```
"product_detail_clicked" \Rightarrow "product_purchase_intended" \Rightarrow "product_wanted"

"product_detail_clicked" \Rightarrow "product_purchase_intended" \Rightarrow "product_wanted",
and

"product_detail_clicked" \Rightarrow "product_wanted"

based on the store accessed.
```

Use this to make a "rule set" whit a probability. Then again use this to recommend items for the users with that given probability.

F:

Articles 4 l8er:

#### 2.1.4 Recommenders (Similar systems? something)

#### 2.1.5 Items clustering

### 2.2 Data Findings

#### 2.2.1 What Can Be Understood From The Data

#### The Expected

Event "app\_started", all have user\_id's Event "app\_first\_started", all user\_id's are NULL Event "user logged in", all have user id's... (assigned with login, event saved after login?)

#### The Strange

NULL valued events: (Not all strange, but put together for readability) facebook\_share\_changed collection\_viewed wantlist\_menu\_entry\_clicked app\_became\_active

app first started facebook login failed

 $> db.prod.distinct('event\_json.ipAddress').length\ 9033 > db.prod.distinct('event\_json.eventData.device\_id').length\ 2644 > db.prod.distinct('user\_id').length\ 1660$ 

More devices than users, can't fill the blanks with device id

Q's: app\_became\_active id's for better sessions? store\_clicked vs. storefront\_clicked (23 vs. 19744) API item-id's mapping to event product id's; how to map?

#### 2.2.2 Graphs N' Shit

#### 2.3 What to use

#### 2.3.1 Some Awesome Algorithms (Build up with project progress)

The Good

The Bad

### 2.3.2 Why Not To Use These (Same As above)

The Good

The Bad

#### 2.4 How to evaluate

#### 2.4.1 What Has Been Done Before

#### 2.4.2 What To Use

The Good

The Bad

#### 2.5 Evaluation

Thoughts:

# Requirements

Contents		
3.1	Capturing the Requirements	
3.2	Functional Requirements	
3.3	Non Functional Requirements	
3.4	Prioritized Requirements	

### 3.1 Capturing the Requirements

### 3.2 Functional Requirements

FR1

FR6

FR7

FR1

FR6

FR7

### 3.3 Non Functional Requirements

NFR1

NFR1

### 3.4 Prioritized Requirements

# Design

Contents																		
4.1	Arc	nitecture															10	0
	4.1.1	Logical View													 		1	0
	4.1.2	Process View													 		1	0
	4.1.3	Physical View													 		1	0
4.2	Algo	orithm Design															10	0
	4.2.1	Prediction								 					 		1	0

CHAPTER 4. DESIGN 10

- 4.1 Architecture
- 4.1.1 Logical View
- 4.1.2 Process View
- 4.1.3 Physical View
- 4.2 Algorithm Design
- 4.2.1 Prediction

# Implementation

Contents																						
5.1	Maj	jor	Re	equ	ıire	$\mathbf{m}$	ent	s													12	
	5.1.1	F	R1											 							 12	
	5.1.2	F	R6											 							 12	
	5.1.3	F	R7											 							 12	
	5.1.4	N	FR	1										 							 12	

### 5.1 Major Requirements

- 5.1.1 FR1
- 5.1.2 FR6
- 5.1.3 FR7
- 5.1.4 NFR1

## Evaluation

Contents		
6.1	Development Process	14
6.2	Result Evaluation	14
6.3	Issues	14

### 6.1 Development Process

 $\mathbf{Good}$ 

Bad

### 6.2 Result Evaluation

Testing of preliminary study

Testing of code functionality

Types of testing not used

### 6.3 Issues

# Conclusion

Contents		
7.1	Final Product	16
7.2	Related Work	16
7.3	Future Work	16

- 7.1 Final Product
- 7.2 Related Work
- 7.3 Future Work

### Appendix A

## Requirements

- A.1 Functional Requirements
- A.2 Non Functional Requirements

Appendix B

Design

### Appendix C

### Implementation

### C.1 Implemented Functional Requirements

 $\mathbf{FR}$  1: Blablaba

FR 2: Blablaba

### C.2 Implemented Non Functional Requirements

NFR 1: Blablaba

NFR 2: Blablaba

# Bibliography