



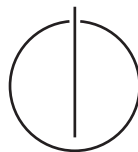
FAKULTÄT FÜR INFORMATIK

DER TECHNISCHEN UNIVERSITÄT MÜNCHEN

Bachelorarbeit in Informatik

**Myriad – a mailmerge tool for massive  
parallel, yet individual email conversations**

Ludwig Schubert







# FAKULTÄT FÜR INFORMATIK

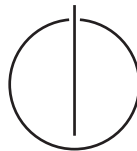
DER TECHNISCHEN UNIVERSITÄT MÜNCHEN

Bachelorarbeit in Informatik

Myriad – a mailmerge tool for massive parallel, yet  
individual email conversations

Myriad – ein Serienbrief Email-Tool fr hochgradig  
parallele, jedoch individualisierte Emailkonversationen

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Advisor: Dipl.Inf. Jon Doe  
Date: August 15, 2013





Ich versichere, dass ich diese Diplomarbeit selbständig verfasst und nur die angegebenen Quellen und Hilfsmittel verwendet habe.

München, den 14. Juni 2013

Ludwig Schubert



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## **Abstract**

An abstracts abstracts the thesis!





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## Acknowledgments

If someone contributed to the thesis... might be good to thank them here.



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# **Main Matter**





# **1. Introduction**

This is the introduction.

## **1.1. Motivation**

## **1.2. Goals and Background**

## **1.3. Outline**

Hallo Latex: [1] Danke Latex!



## **2. Technical Backgrounds**

### **2.1. Web Applications**

**2.1.1. Why build a web application instead of a native one?**

**2.1.2. Main Components of a Web Application**

**2.1.3. Rails and Ruby**

### **2.2. Email Systems**

**2.2.1. Working with RFC 2822**

**2.2.2. IMAP and SMTP**

### **2.3. Workflow Systems**

**2.3.1. History of Workflow Systems**

**2.3.2. Famous Examples**



## **3. Comparison with similar systems**

### **3.1. Mailmerge Systems**

#### **3.1.1. CRM Systems**

#### **3.1.2. Dedicated Mailmerge Systems**

#### **3.1.3. Backend Services**

Amazon SES

SendGrid

### **3.2. Customer Support Systems**



## **4. Concept**

### **4.1. Functional Analysis**

### **4.2. Product Functions**

### **4.3. User Interface**

### **4.4. Technical Analysis**

#### **4.4.1. Runtime Environment**

#### **4.4.2. Server Software Stack**

#### **4.4.3. Client Side**

#### **4.4.4. Backend Service Connections**

Google Mail

Google Docs

### **4.5. System Design**

#### **4.5.1. Database Schema**

Uncommon Patterns

#### **4.5.2. Distribution of System Components**







## 5. Implementation

### 5.1. Preparation and Tools

#### 5.1.1. Development Environment

#### 5.1.2. Collaborative Development

`git`, `gitflow` and Github

#### 5.1.3. Deployment

Deployment Tool `Capistrano`

### 5.2. Server Component

#### 5.2.1. Core Classes and their Interaction

`Contact`

`Template`

`Email`

`Campaign`

`Conversation`

`Key & Value`

`Search & KeyBinding`

`Notification`

#### 5.2.2. Workers and their Jobs

#### 5.2.3. Maintenance and Rake Tasks

### 5.3. Backend Services Connection

#### 5.3.1. Email Fetching

`IMAP IDLEing`

#### 5.3.2. Google Docs Syncing

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### 5.4. “Best Practices”

#### 5.4.1. Core Extensions

#### 5.4.2. Lean Workers with `AbstractWorker`

## **6. Evaluation**

### **6.1. Comparison with Initial Goals**

### **6.2. Observed Use Cases**

#### **6.2.1. Recruiting Exchange Students for one of the Most Desired Universities of the World**

#### **6.2.2. Requesting paper Reviews for a Journal**

#### **6.2.3. Managing Incoming Class Administration Emails**



## **7. Conclusion**

**7.1. Conclusion of this work**

**7.2. Discussion of results**

**7.3. Future Work**



# Bibliography

- [1] Leslie Lamport. *LaTeX : A Documentation Preparation System User's Guide and Reference Manual*. Addison-Wesley Professional, 1994.





## List of Figures



# Appendix



## **A. Detailed Descriptions**

Here come the details that are not supposed to be in the regular text.