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Diplomarbeit

SAIPIA
SUBTITITLE

Eingereicht von

Gabriel Mrkonja
Florian Prandstetter
Luna Schätzle

Eingereicht bei

Höhere Technische Bundeslehr- und Versuchsanstalt
AnichstraSSe

Abteilung für Wirtschaftsingenieure/Betriebsinformatik

Betreuer

Greinöcker
Egger

Projektpartner

XXX

Innsbruck, April 2025

Abgabevermerk:

Betreuer/in:

Datum:

Gabriel Mrkonja
Florian Prandstetter
Luna Schätzle

SPERRVERMERK

Auf Wunsch der Firma

XXX

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Kurzfassung / Abstract

Eine Kurzfassung ist in deutscher sowie ein Abstract in englischer Sprache mit je maximal einer A4-Seite zu erstellen. Die Beschreibung sollte wesentliche Aspekte des Projektes in technischer Hinsicht beschreiben. Die Zielgruppe der Kurzbeschreibung sind auch Nicht-Techniker! Viele Leser lesen oft nur diese Seite.

Beispiel für ein Abstract (DE und EN)

Die vorliegende Diplomarbeit beschäftigt sich mit verschiedenen Fragen des Lernens Erwachsener mit dem Ziel, Lernkulturen zu beschreiben, die die Umsetzung des Konzeptes des Lebensbegleitenden Lernens (LBL) unterstützen. Die Lernfähigkeit Erwachsener und die unterschiedlichen Motive, die Erwachsene zum Lernen veranlassen, bilden den Ausgangspunkt dieser Arbeit. Die anschließende Auseinandersetzung mit Selbstgesteuertem Lernen, sowie den daraus resultierenden neuen Rollenzuschreibungen und Aufgaben, die sich bei dieser Form des Lernens für Lernende, Lehrende und Institutionen der Erwachsenenbildung ergeben, soll eine erste Möglichkeit aufzeigen, die zur Umsetzung dieses Konzeptes des LBL beiträgt. Darüber hinaus wird im Zusammenhang mit selbstgesteuerten Lernprozessen Erwachsener die Rolle der Informations- und Kommunikationstechnologien im Rahmen des LBL näher erläutert, denn die Eröffnung neuer Wege zur orts- und zeitunabhängiger Kommunikation und Kooperation der Lernenden untereinander sowie zwischen Lernenden und Lernberatern gewinnt immer mehr an Bedeutung. Abschließend wird das Thema der Sichtbarmachung, Bewertung und Anerkennung des informellen und nicht-formalen Lernens aufgegriffen und deren Beitrag zum LBL erörtert. Diese Arbeit soll

einerseits einen Beitrag zur besseren Verbreitung der verschiedenen Lernkulturen leisten und andererseits einen Reflexionsprozess bei Erwachsenen, die sich lebensbegleitend weiterbilden, in Gang setzen und sie somit dabei unterstützen, eine für sie geeignete Lernkultur zu finden.

This thesis deals with the various questions concerning learning for adults with the aim to describe learning cultures which support the concept of live-long learning (LLL). The learning ability of adults and the various motives which lead to adults learning are the starting point of this thesis. The following analysis on self-directed learning as well as the resulting new attribution of roles and tasks which arise for learners, trainers and institutions in adult education, shall demonstrate first possibilities to contribute to the implementation of the concept of LLL. In addition, the role of information and communication technologies in the framework of LLL will be closer described in context of self-directed learning processes of adults as the opening of new forms of communication and co-operation independent of location and time between learners as well as between learners and tutors gains more importance. Finally the topic of visualisation, validation and recognition of informal and non-formal learning and their contribution to LLL is discussed.

Gliederung des Abstract in **Thema, Ausgangspunkt, Kurzbeschreibung, Zielsetzung**.

Projektergebnis Allgemeine Beschreibung, was vom Projektziel umgesetzt wurde, in einigen kurzen Sätzen. Optional Hinweise auf Erweiterungen. Gut machen sich in diesem Kapitel auch Bilder vom Gerät (HW) bzw. Screenshots (SW). Liste aller im Pflichtenheft aufgeführten Anforderungen, die nur teilweise oder gar nicht umgesetzt wurden (mit Begründungen).

Erklärung der Eigenständigkeit der Arbeit

EIDESSTATTLICHE ERKLÄRUNG

Ich erkläre an Eides statt, dass ich die vorliegende Arbeit selbständig und ohne fremde Hilfe verfasst, andere als die angegebenen Quellen und Hilfsmittel nicht benutzt und die den benutzten Quellen wörtlich und inhaltlich entnommenen Stellen als solche erkenntlich gemacht habe. Meine Arbeit darf öffentlich zugänglich gemacht werden, wenn kein Sperrvermerk vorliegt.

Ort, Datum

Verfasser 1

Ort, Datum

Verfasser 1

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1 Einleitung

In der Einleitung wird erklärt, wieso man sich für dieses Thema entschieden hat. (Zielsetzung und Aufgabenstellung des Gesamtprojekts, fachliches und wirtschaftliches Umfeld)

1.1 Vertiefende Aufgabenstellung

1.1.1 Schüler*innen Name 1

1.1.2 Schüler*innen Name 2

1.2 Dokumentation der Arbeit

Es werden die Projektergebnisse dokumentiert

- Grundkonzept
- Theoretische Grundlagen
- Praktische Umsetzung
- Lösungsweg
- Alternativer Lösungsweg
- Ergebnisse inkl. Interpretation

Weitere Anregungen:

- Fertigungsunterlagen
- Testfälle (Messergebnisse)
- Benutzerdokumentation
- Verwendete Technologien und Entwicklungswerkzeuge

2 Open source evaluation on Economics

2.1 Research Question

The focus of this research is to analyze the impact of Open Source on economic systems and its broader implications for industries and society. This includes an exploration of how Open Source technologies drive innovation, enhance cost efficiency, and promote collaboration across diverse sectors. Given the significant reliance on Open Source tools and frameworks within our project, this study seeks to identify the advantages, challenges, and potential economic impacts of adopting and integrating Open Source solutions. Through this investigation, we aim to evaluate how Open Source influences economic dynamics and assess its role in shaping the future of modern technological development.

2.2 Introduction

2.2.1 What is Open Source?

Open Source refers to a collaborative model of software development and distribution, where the source code is made publicly accessible. This openness allows users not only to utilize the software but also to modify and redistribute it, fostering a culture of transparency and innovation. The development process often involves a community of contributors who collectively enhance the software's functionality, security, and usability.

Prominent examples of Open Source software include the Linux operating system, the Apache web server, and the Firefox web browser. These projects demonstrate the power of collaborative development and have profoundly influenced both technological advancement and market dynamics.

2.2.2 Advantages of Open Source

The adoption of Open Source software offers numerous benefits, including:

- **Cost Efficiency:** Open Source software is often free of charge, reducing expenses related to software licensing and maintenance.
- **Flexibility:** Users can access and modify the source code to tailor the software to their specific needs.
- **Security:** With publicly available source code, vulnerabilities can be identified and addressed by a global community of experts.
- **Community Support:** Open Source projects often benefit from active developer communities, offering support, updates, and patches.
- **Innovation:** Collaboration within the Open Source ecosystem fosters creativity, leading to the development of innovative solutions.
- **Compatibility:** Many Open Source projects are designed to integrate seamlessly with existing systems and standards.
- **Transparency:** The availability of source code ensures that users can verify the software's functionality and trustworthiness.
- **Freedom:** Users have the liberty to use, modify, and distribute the software without restrictive licensing agreements.

2.2.3 Why Do People Use Open Source?

The adoption of Open Source software is driven by a variety of factors, including:

- **Control:** Users have greater control over the software's functionality and can customize it to meet specific requirements.

- **Cost Savings:** The availability of free software significantly reduces expenses, especially for startups and educational institutions.
- **Security:** Open access to the source code allows users to audit and enhance the softwares security.
- **Community:** The collaborative nature of Open Source projects provides access to a wealth of shared knowledge and resources.
- **Stability:** Many Open Source projects offer long-term support and regular updates, ensuring consistent performance.
- **Skill Development:** Open Source is widely used in educational settings, making familiarity with these tools a valuable professional skill.

2.2.4 Chapter Overview

This chapter introduces the concept of Open Source and highlights its significance in the modern economy. Key aspects such as the advantages and disadvantages of Open Source, as well as the challenges associated with its adoption and creation, are discussed. Additionally, the chapter explores revenue models within the Open Source ecosystem and its role in economic systems. Finally, the chapter concludes by presenting the Open Source tools utilized in this project, alongside a reflection on the experiences gained through their application.

Source: https://en.wikipedia.org/wiki/Open_source

02.12.2024 Source : <https://opensource.com/resources/what-open-source>

02.12.2024

2.3 What is and isnt Open Source?

2.3.1 Definition and Guiding Principles

Open Source, as defined by the Open Source Initiative (OSI), is a development approach that prioritizes accessibility and transparency of software source code. It allows users to view, modify, and distribute the code freely, fostering collaboration and innovation.

The OSI outlines several key principles that define Open Source software:

- **Free Redistribution:** The software can be freely shared and distributed without restrictions.
- **Source Code Access:** Users must have access to the source code to study, modify, and improve the software.
- **Modification and Sharing:** Users are allowed to create and share modified versions, as long as they follow the license terms.
- **No Discrimination:** The software must be available for everyone, regardless of individual characteristics or professional field.
- **Neutrality and Compatibility:** The license must not favor specific technologies or restrict the use of other software.

These principles ensure that Open Source remains a transparent, inclusive, and adaptable approach to software development, enabling innovation and collaboration across industries and communities.

Source: <https://opensource.org/osd>

02.12.2024

2.3.2 Misconceptions About Open Source

Open Source is often misunderstood and confused with other software distribution models, which can lead to misconceptions about its nature, functionality, and benefits. It is crucial to distinguish Open Source from other types of software:

- **Open Source:** Software that is freely accessible, modifiable, and redistributable under an Open Source license, adhering to principles such as transparency and collaboration.
- **Freeware:** Software available at no cost but typically without access to the source code, meaning users cannot modify or redistribute it.
- **Proprietary Software:** Software owned and controlled by a single entity, restricting access to the source code and preventing users from making modifications or redistributions.
- **Commercial Software:** Software sold for profit, which may be either Open Source or proprietary, depending on the licensing terms.

Understanding these distinctions helps users make informed choices about software selection and ensures their expectations align with the capabilities and freedoms provided by the chosen software.

To verify whether a software is truly Open Source, it is essential to examine the license agreement and confirm the availability of the source code. Software with an OSI-approved license is a reliable indicator that it adheres to Open Source principles, providing transparency, freedom, and collaboration opportunities.

One common misconception about Open Source software arises from the phrase "free as in freedom" versus "free as in free beer." While "free as in freedom" emphasizes the liberty to access, modify, and share the software, "free as in free beer" simply denotes that the software is free of cost. Although Open Source software is often available without charge, its true value lies in the freedoms it grants to users, developers, and organizations. This distinction highlights the broader significance of Open Source as a philosophy, not just a pricing model.

Source: <https://opensource.org/faq>
02.12.2024

2.4 The Role of Open Source in Economics

Cost efficiency, innovation, and collaboration are key factors that have positioned Open Source as a cornerstone of modern economic systems. Many industries and organizations utilize Open Source software to reduce costs, increase flexibility, and promote creativity, thereby driving economic growth and sustainability.

2.4.1 Driving Innovation and Shaping Market Dynamics

Open Source software fosters a culture of experimentation, creativity, and knowledge sharing, leading to the rapid development of new technologies and solutions. By granting users access to modify and redistribute the

source code, Open Source encourages collaboration and innovation, enabling individuals and organizations to build on existing software to create new products and services.

One of the unique strengths of Open Source is its inclusivity anyone, regardless of their affiliation with a company, can contribute to the development of Open Source software. This open participation lowers barriers to entry for innovation and allows passionate individuals to make meaningful contributions.

In addition to individual contributions, companies also play a significant role in advancing Open Source projects. With greater resources and structured teams, organizations can contribute to Open Source in a more organized and impactful manner, accelerating development and improving software quality.

The collaborative nature of Open Source also enables cross-industry partnerships, allowing organizations from diverse sectors to share knowledge, resources, and best practices. This cross-pollination of ideas not only enhances software development but also fosters innovation across industries, ultimately shaping market dynamics and driving economic progress.

source: <https://opensource.com/resources/what-open-source>

03.12.2024 source: <https://books.google.at/books?hl=de&lr=id=nKUJKu6MtRQCoi=fndpgonepageq=the>

2.4.2 Supporting Startups and small Enterprises

The impact of Open Source on startups and small enterprises is particularly interesting and significant. For these small businesses, Open Source software offers a cost-effective alternative to proprietary solutions, enabling them to access powerful tools and technologies without the high licensing fees associated with commercial software.

source: <https://www.studiolabs.com/open-source-for-startups-lower-costs-higher-growth/>

03.12.2024

- Driving innovation and shaping market dynamics.
- Supporting startups and small enterprises through cost reduction and flexibility.
- Enabling cross-industry collaboration and open innovation.

2.5 Advantages and Disadvantages of Open Source

2.5.1 Advantages

- Cost savings.
- Flexibility for customization.
- Increased innovation due to open collaboration.

2.5.2 Disadvantages

- Reliance on community support.
- Potential security vulnerabilities.
- Compatibility issues with other systems.

2.6 Challenges of Using or Creating Open Source

2.6.1 Technical Challenges

- Maintaining quality and long-term compatibility.
- Managing security and privacy risks.

2.6.2 Economic Challenges

- Monetization and sustainability concerns.
- Balancing free access with profitability.

2.6.3 Social Challenges

- Effective community management and governance.

2.6.4 Legal Issues

- Navigating complex licensing models (e.g., GPL, MIT).

2.7 Revenue Models in Open Source

- Common business models:
 - Freemium.
 - Support and maintenance services.
 - Dual licensing.
 - Crowdfunding and donations.
- Real-world examples of successful Open Source businesses (e.g., Linux, Red Hat, MySQL).

2.8 Open Source in Key Industries

- The role of Open Source in transforming:
 - Information Technology (e.g., operating systems, tools).
 - Artificial Intelligence (e.g., TensorFlow, PyTorch).
 - Education (e.g., Moodle, Jupyter Notebooks).
- Governmental and policy support for Open Source adoption.

2.9 Reflexion

- Answering the research question based on the above analysis.
- Evaluating the broader implications of Open Source for economic systems.

- Connecting Open Source's potential with sustainability and global development.

2.10 Open Source in Practice: A Personal Experience

- Open Source tools and technologies used in the project:
 - Python, Flask, Vue.js, Linux, wtr.in API, LLaMA API.
- Challenges and solutions encountered:
 - Technical hurdles.
 - Why Open Source alternatives were chosen or rejected.
- Comparison of Open Source and closed-source software used:
 - Reasons for choosing closed-source alternatives where applicable.

2.11 Open Source in Our Project & Licensing

2.11.1 Project

- Description of the project.
- How Open Source principles were applied.
- Benefits and challenges of Open Source in the project.

2.11.2 License

- Choice of license and rationale.
- How the license aligns with the projects goals.
- The license problems of the project.
- Future plans for the projects development and licensing.

2.12 Conclusion

- Summary of Open Sources economic impact.
- Reflections on its potential to drive future innovation and growth.
- Final thoughts on your personal experience and insights gained.

3 Test

Hier ist ein kleiner Test für die Verwendung von \LaTeX .
asdfasdf asdfasdfs defaultasd fsad fsaddf

4 Latex-Beispiele

4.1 Aulistungen

- *Kursiv* Text 1
- **Fett**
- TT

Dasselbe durchnummeriert:

1. *Kursiv* Text 1
2. **Fett**
3. TT

4.2 Tabellen

Eine Tabelle mit Testdaten:

position	mean	median	sd	min	max
6	6.89	5.61	7.29	0.31	160.12
9	5.35	4.39	4.94	0.18	76.40
12	8.70	6.96	10.72	0.15	239.88
13	9.01	7.54	7.60	0.15	138.86
15	8.18	6.99	6.86	0.16	117.26
16	5.26	4.42	4.99	0.08	110.21
17	5.87	4.79	6.13	0.15	98.88
36	8.21	6.72	7.58	1.36	122.35
42	6.77	5.93	6.98	1.72	123.72
43	6.27	5.53	3.21	0.57	35.69

Tabelle 4.1: Eine Tabelle mit Testdaten

Sprachen wie z.B. **R** können Latex-Tabellen exportieren, sie müssen also nicht immer so aufwändig formatiert werden.

4.3 Abbildungen

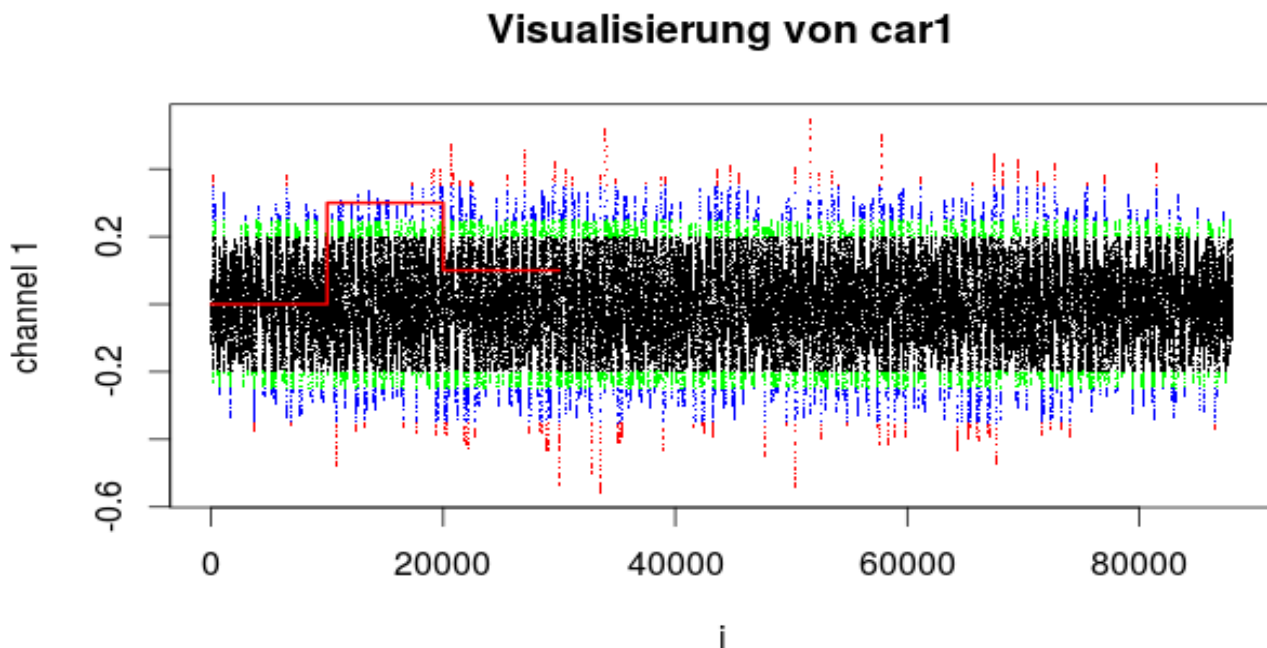


Abbildung 4.1: Ein Beispiel für ein Bild

4.4 Quellcode

Quellcode wird automatisch (mit der Möglichkeit die Sprache anzugeben) formatiert und in das Listings-Verzeichnis gegeben:

4.4.1 Java-Code

```
1 int i = 1;  
2 float f = 2;
```

```
3 System.out.printf("Int-Z %d Float-Z: 52f",i ,f );
```

Listing 4.1: Java-Beispiel

4.4.2 Python-Code

```
1 #Hier ein kleines Beispiel in Python
2 lower = 0
3 upper = 10
4 for i in range(lower,upper):
5     print(i)
```

Listing 4.2: Python-Beispiel

4.4.3 Lesen von Dateien

Es kann auch direkt von Dateien gelesen werden:

```
1 public class First {
2
3     public static void main(String[] args) {
4         for (int i = 0; i < 10; i++) {
5             System.out.println(i);
6         }
7     }
8 }
```

Listing 4.3: Java-Beispiel von Datei

4.5 Referenzen

Beispiele für die Verwendung von Referenzen:

- Wie in Tabelle [4.1](#) ersichtlich...
- Wir sind im Kapitel [4](#)
- In Zeile 2 im Listing [4.3](#)

4.6 Zitate

Hier das Zitat eines Buches: Couper (2001) Wird alles automatisch mit bibtex erledigt.

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