Building Interactive LLM-persona
Literature Review

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Literature Review

Objectives

- Develop a research question from gaps and opportunities in the literature review

Scope of the literature

- Literature under CHI (Conference on Human Factors in Computing Systems)
- Topics to include:
    - Persona tool in HCI (knowledge graph)
    - LLMs and Challenges related to Stereotypes and Biases
    - Human-centered design (HCD) phases and use of persona tool in those phases

Persona

Personas are **composite archetypes** created from **user behavior patterns identified during research**, serving as **powerful tools for understanding and communicating about user goals and behaviors in specific contexts**. They must be developed with **rigor and sophistication**, **avoiding stereotypes** and ensuring they accurately represent a meaningful cross section of users.

- Cooper, Alan, et al. About Face: The Essentials of Interaction Design. 4th ed., Wiley, 2014.

HCI (Human-Computer Interaction)

The concept of Human-Computer Interaction (HCI) is centered around the study and practice of **designing user interfaces** that facilitate **effective interaction between humans and computers**.

- Card, Stuart K., Thomas P. Moran, and Allen Newell. The Psychology of Human-Computer Interaction. Lawrence Erlbaum Associates, 1983.
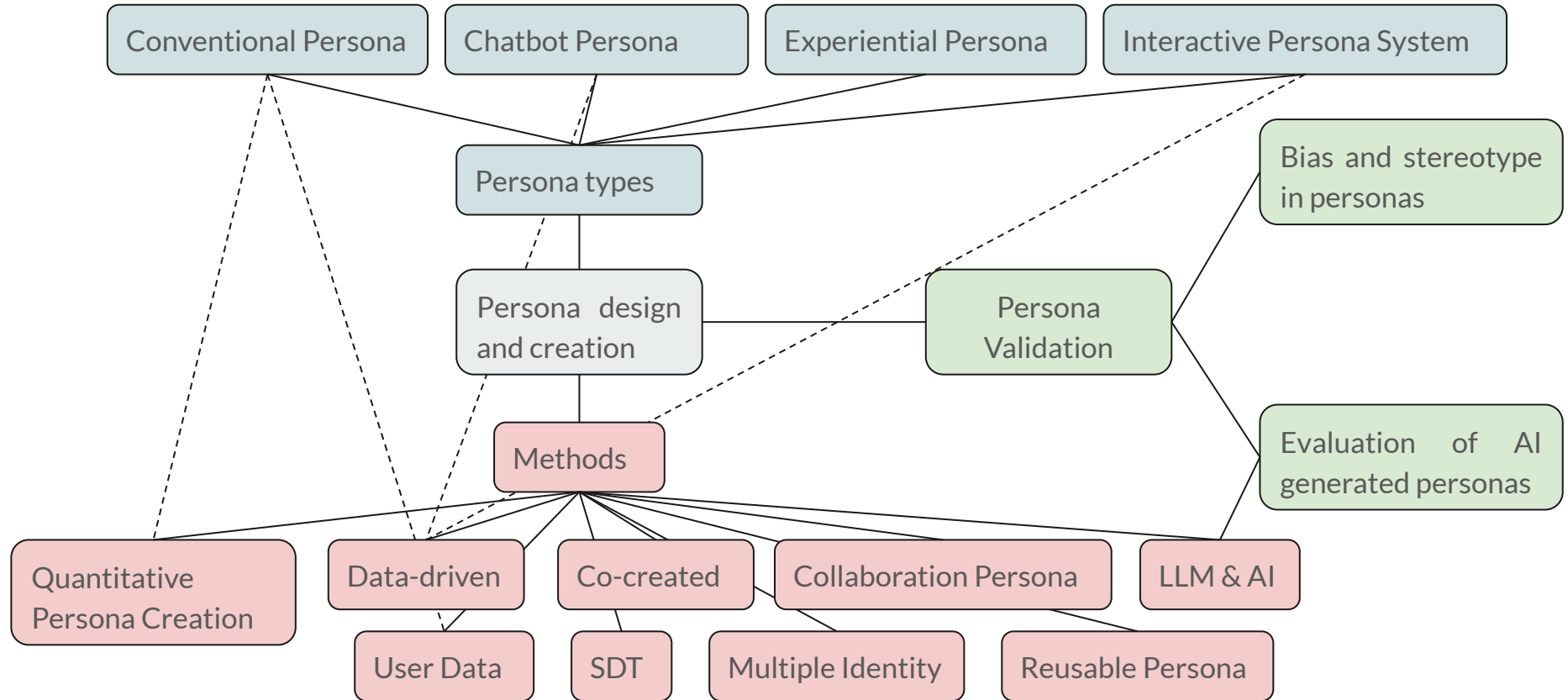
Persona tool in HCI

Persona tool in HCI

- Persona tool in HCI (Knowledge graph)
- Approaches for Designing Persona
- Interactive Persona

Persona tool in HCI Knowledge Graph

Persona tool in HCI (Knowledge Graph)

Most Recent Persona Studies | CHI 24

Deus Ex Machina and Personas from **Large Language Models**: Investigating the Composition of **AI-Generated Persona** Descriptions

CloChat: Understanding How People **Customize**, **Interact**, and **Experience** Personas in **Large Language Models**

Auto-Generated Personas: Enhancing User-centered Design Practices among University Students

Generating personas using **LLMs** and assessing their viability

Writer-Defined **AI Personas** for On-Demand Feedback Generation

Challenges and Opportunities of **LLM-Based Synthetic Personae** and Data in HCI

The Illusion of **Artificial Inclusion** (against substituting human participants with modern **generative AI**)

Approaches for Designing Persona

Approaches for Designing Persona

- User Data

- Quantitative Persona Creation (QPC)

- Data-driven

- Co-created

- Collaboration Persona

- LLM & AI

- Self-Determination Theory (SDT)

- Multiple Identity

- Reusable Persona

Approaches for Designing Persona

- **Data-driven**
  - How do designers and user experience professionals actually perceive and use personas? (CHI '12)
  - A Literature Review of Quantitative Persona Creation (CHI '20)
  - Persona development for information-rich domains (CHI EA '03)
  - Data-Driven Persona Development (CHI '08)
  - Data-driven Personas: Constructing Archetypal Users with Clickstreams and User Telemetry (CHI '16)
  - Persona Generation from Aggregated Social Media Data (CHI EA '17)
  - Findings of a User Study of Automatically Generated Personas (CHI 18)
  - Creating Manageable Persona Sets from Large User Populations (CHI EA '19)
  - Personas Changing Over Time: Analyzing Variations of Data-Driven Personas During a Two-Year Period (CHI EA '19)
- **LLM & AI**
  - Writer-Defined AI Personas for On-Demand Feedback Generation (CHI '24)
  - Auto-Generated Personas: Enhancing User-centered Design Practices among University Students (CHI '24)
  - Challenges and Opportunities of LLM-Based Synthetic Personae and Data in HCI (CHI EA '24)
  - Deus Ex Machina and Personas from Large Language Models: Investigating the Composition of AI-Generated Persona Descriptions (CHI '24)
- **Latent Semantic Analysis (LSA)**
  - A latent semantic analysis methodology for the identification and creation of personas (CHI '08)
- **Co-created**
  - Co-Created Personas: Engaging and Empowering Users with Diverse Needs Within the Design Process (CHI '19)
  - Co-constructing child personas for health-promoting services with vulnerable children (CHI '14)
- **Collaboration Persona**
  - Collaboration personas: a new approach to designing workplace collaboration tools (CHI '11)
  - Comparing collaboration and individual personas for the design and evaluation of collaboration software (CHI '12)
  - Emphasizing dysfunctional group dynamics in collaboration personas: specification of an approach (CHI EA '13)
- **Self-Determination Theory (SDT)**
  - Personas and Behavioral Theories: A Case Study Using Self-Determination Theory to Construct Overweight Personas (CHI '17)
- **Multiple Identity**
  - Personas and Identity: Looking at Multiple Identities to Inform the Construction of Personas (CHI '19)
- **Reusable Persona**
  - Towards Reusable Personas for Everyday Design (CHI EA '16)

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  - **Persona development for information-rich domains (CHI EA '03)**
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Approaches for Designing Persona | Data-driven

Qualitative and Quantitative

- **Interviews**
- **Observations**
- **Survey data**
- **Statistical data**
- **Clickstreams**
- **Online social media data**

Approaches for Designing Persona | Data-driven

Persona development for information-rich domains (CHI EA '03)

- The paper discusses the creation of personas for **complex websites** by understanding **user information needs** and **mental models**.
- It introduces a **statistical method** to **identify groupings of these needs**, which designers can use alongside **data from interviews and observations** to **generate and refine personas**.
- Includes both **quantitative** and **qualitative data**

Approaches for Designing Persona | Data-driven

Data-Driven Persona Development (CHI '08)

- introduces a novel method for **creating** and **validating personas** based on **statistical analysis of customer data**, making the process **fast** and **cost-effective**
- **define the persona attributes** that were **most meaningful to the stakeholders**, created **survey** based on the **stakeholder feedbacks**
- from survey responses, the team performed **factor analysis** to allow the persona groups to emerge
- **Advantages**: **real customer data, stakeholder involvement, cost-effective, and organic persona creation**

Data-driven Personas: Constructing Archetypal Users with Clickstreams and User Telemetry (CHI '16)

- a **quantitative bottom-up data-driven** approach to create personas
- user behavior via **clickstreams** gathered automatically from **telemetry data**
- structure the data into 10 workflows **via hierarchical clustering**
- use **mixed models**, **a statistical approach** that incorporates these clustered workflows to create five representative personas
- **Advantages**: **scalable**, **cost-effective**, and **reflective of actual user behavior**

Approaches for Designing Persona | Data-driven User Data

How do designers and user experience professionals actually perceive and use personas? (CHI '12)

- Identifies **limits** to persona approach
- "**Practitioners** used personas almost **exclusively for communication**, but **not for design**. Participants identified four problems with personas, finding them **abstract**, **impersonal**, **misleading** and **distracting**."
- "Personas cannot replace immersion in **actual user data**. And rather than focusing on creating engaging personas, it is critical to **avoid persona attributes that mislead or distract**."
- "Participants found it **difficult to understand the abstraction process from user data to persona**, so personas came across as **lacking critical detail required for design** ."

Approaches for Designing Persona | Data-driven

Persona Generation from Aggregated Social Media Data (CHI EA '17)

- introduces a methodology for generating personas using **large-scale, real-time social media data**
- The "methodology can first identify both **distinct and impactful user segments** and then **create persona descriptions by automatically adding pertinent features**, such as names, photos, and personal attributes."

Findings of a User Study of Automatically Generated Personas (CHI 18)

- The paper reports on a semi-naturalistic user study of the Automatic Persona Generation (APG) system using **large-scale audience data** from **social media channels**.
- The research "results show that **having an interactive system may aid in keeping personas at the forefront while making customer-centric decisions and indicate that data-driven personas fulfill information needs of decision makers by mixing personas and numerical data**".

Approaches for Designing Persona | Data-driven

Creating Manageable Persona Sets from Large User Populations (CHI EA '19)

- Problem: modern online systems often provide **big data** from millions of users that display **vastly different behaviors**, resulting in possibly **thousands of personas** representing the **entire user population**
- present a technique for **reducing the number of personas** to a smaller number that **efficiently represents the complete user population**, while being more **manageable** for end users of personas
- Approach: the researchers first isolate the key user behaviors and demographical attributes, creating **thin personas**, and we then apply **an algorithmic cost function** to collapse the set to the **minimum needed** to represent the whole population.

Approaches for Designing Persona | Data-driven

Detecting Demographic Bias in Automatically Generated Personas (CHI EA '19)

- investigates the presence of **demographic bias** in personas generated automatically from **large-scale social media data**
- The bias is highest when doing an **exact match comparison**, and the bias decreases when comparing at age or gender level. The **bias also decreases** when **increasing the number of generated personas**.

Approaches for Designing Persona | Data-driven

Personas Changing Over Time: Analyzing Variations of Data-Driven Personas During a Two-Year Period (CHI EA '19)

- Problem: **Personas' underlying data may become stale, necessitating ongoing data collection**.
- Study: Collected monthly demographic data over two years for a large online content publisher.
- Method: Generated fifteen personas each month using the same algorithm.
- Findings:
  - 18.7% average monthly change in personas.
  - 23.3% average yearly change.
  - 47% change over two years.
- Conclusion: **Personas change over time**; organizations should **continuously collect data to monitor these changes.**

Approaches for Designing Persona | Data-driven Quantitative Persona Creation (QPC)

A Literature Review of Quantitative Persona Creation (CHI '20)

- Quantitative persona creation (QPC) has **tremendous potential**, as HCI researchers and practitioners can leverage **user data** from **online analytics and digital media platforms** to better understand their users and customers.
- a lack of a systematic overview of the QPC methods and progress made, with no standard methodology or known best practices
- To address this gap, the team reviewed "49 **QPC research articles** from 2005 to 2019. Results indicate three stages of QPC research: **Emergence, Diversification, and Sophistication**."
- "Sharing resources, such as datasets, code, and algorithms, is crucial to achieving the next stage (**Maturity**)."

Approaches for Designing Persona | Data-driven

The Ethics of Data-Driven Personas (CHI EA '20)

- This research paper delves into the ethical considerations surrounding Data-Driven Persona Creation (DDPC).
- DDPC utilizes **large datasets and machine learning algorithms** to generate user personas, which are fictional characters representing different user segments.
- The use of these techniques aims to **streamline product development, enhance organizational strategy, and improve customer operations**.
- The authors highlight several **ethical concerns** that arise from this practice using Gillespie's framework of algorithmic ethics (includes six ethical dimensions)
- The paper advocates for a **comprehensive ethical analysis at every step of the DDPC process** to **ensure fairness and transparency**.

Summary for Data-driven Persona

Issue in traditional persona process

- Traditional methods rely on **qualitative data** like surveys and interviews, which is **time-consuming, expensive**, and can be **outdated**
- Traditional methods may not reflect **actual user behavior accurately**, and are based on **limited sample sizes**

Methods: statistical analysis, automatic persona generation

Benefits

- **Accuracy**: personas are grounded in user behavior data
- **Scalability**: the methods deal with large data which is suitable for large user bases
- **Efficiency and Cost Effective**: the proposed methods are mostly automated process which aims to be more efficient and reduce the cost comparing to traditional persona development
- **Up-to-date**: some of the methods are based on real-time data or data that can be updated relatively quickly, so it helps to keep the persona up to date

Summary for Data-driven Persona

Challenges and Considerations

- **Potential Bias in Data-Driven Personas** - How to improve algorithm to avoid bias in persona creation
- **Combining Quantitative and Qualitative Data** - while quantitative data represents the user behavior with high accuracy, the qualitative data still remain valuable for adding depth and context to personas
- **Keep Data Up-to-date** - to keep persona up-to-date and accurite, it is important to constantly collecting data to monitor the updates

Approaches for Designing Persona | LLM & AI

Writer-Defined AI Personas for On-Demand Feedback Generation (CHI '24)

- This paper proposed an concept that **generates on-demand feedbacks**, based on **writer-defined AI personas** of any target audience using a prototype text editor called Impressona.
- Based on GPT-3.5
- Conducted with 16 participants who found the concept helpful for **gaining diverse perspectives** but **faced challenges in defining personas and dealing with verbose feedback**.

Approaches for Designing Persona | LLM & AI

Auto-Generated Personas: Enhancing User-centered Design Practices among University Students (CHI '24)

- Traditional persona-building relies on **interviews and ethnography.**
- Developed an auto-generating persona system to improve UCD course activities.
- System is based on GPT-4, DALL-E 2, and knowledge graphs.
- Features of the system:
  - Automated processing of survey data.
  - Automatic generation of 2D avatars.
  - Options for automatic or customized entity generation.
- Evaluation involved 22 participants.

Approaches for Designing Persona | LLM & AI

Auto-Generated Personas: Enhancing User-centered Design Practices among University Students (CHI '24)

Findings:

- Quantitative: Significant **improvements in efficiency, satisfaction, accuracy, and diversity with the automated system** compared to traditional methods. **No significant difference in collaboration and creativity**.
- Qualitative: Positive feedback on the system's efficiency, accuracy, and informative visualization. Negative feedback on UI/UX, complexity, and design style of persona templates.
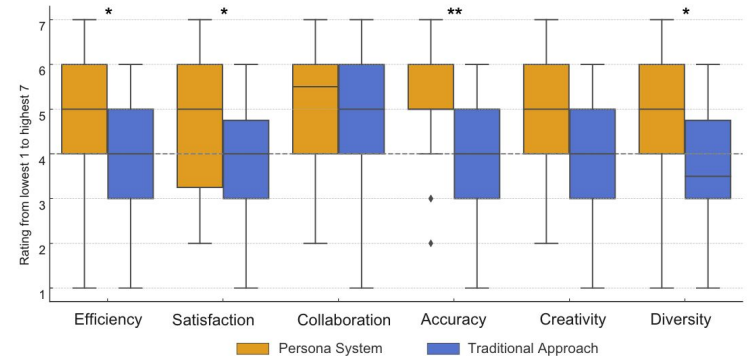
Figure: The figure shows the results of the preliminary persona questionnaire

Approaches for Designing Persona | LLM & AI

Challenges and Opportunities of LLM-Based Synthetic Personae and Data in HCI (CHI EA '24)

- **Synthetic persona and AI-generated data** are emerging in HCI fields such as education, training, and gaming.
- **Large Language Models (LLMs)** show promise for creating synthetic AI personae and data.
- A proposed workshop will engage HCI researchers to **explore and develop future HCI research with LLMs, focusing on opportunities and challenges**.
- Workshop outcomes may be shared through scientific publications or special issues.

Approaches for Designing Persona | LLM & AI

Deus Ex Machina and Personas from Large Language Models: Investigating the Composition of AI-Generated Persona Descriptions (CHI '24)

- The researchers investigated the **diversity and bias** in 450 personas generated by Large Language Models (LLMs), evaluated by internal evaluators and subject-matter experts (SMEs).
- The research findings **reveal biases in LLM-generated personas**, particularly in **age, occupation, and pain points,** as well as a **strong bias towards personas from the United States.**
- The findings suggest that **LLMs can generate consistent personas** perceived as **believable**, **relatable**, and **informative** while containing **relatively low amounts of stereotyping.**

Summary for LLM & AI Generated Persona

Base model: GPT-3.5, GPT 4

Advantages

- **On-demand feedbacks**
- **Improved User Centered Design (UCD)**: improvements in efficiency, satisfaction, accuracy, and diversity compared to traditional methods
- **LLMs can generate consistent personas perceived as believable, relatable, and informative** while containing relatively **low amounts of stereotyping**.

Challenges and Consideration

- **Bias and Stereotyping**: biases may exist in AI-generated personas, particularly in terms of age, occupation, and geographic representation
- **Lack of Understanding and Control**: LLMs often function as "black boxes", making it challenging for researchers to predict and control their outputs

Summary for LLM & AI Generated Persona

Gaps and Opportunities

- How to detect **biases and stereotypes** in the process in order to reduce and correct the biases and stereotypes?
- How to improve the **transparency and understanding of LLM** for designers?
- **Limited Studies on Data-Driven Approaches**: Most persona generation methods are based on writer-defined prompts, survey data, or specific topic prompts. There seem to be a lack of research on fully data-driven persona generation through LLMs.

Approaches for Designing Persona |
Latent Semantic Analysis (LSA)

A latent semantic analysis methodology for the identification and creation of personas (CHI '08)

- This research develops a new methodology for the **identification and creation of personas** through the application of **Latent Semantic Analysis (LSA)**.
- An application of the LSA methodology is provided in the context of the design of an **Institutional Repository system**.
- The LSA methodology helps overcome some of the drawbacks of current methods for the identification and creation of personas, and makes the process **less subjective, more efficient,** and **less reliant on specialized skills.**

Approaches for Designing Persona | Co-Created

Co-Created Personas: Engaging and Empowering Users with Diverse Needs Within the Design Process (CHI '19)

- exploring **co-created personas** as a technique to use in co-design with users who have diverse needs
- the vision was that this would **broaden the demographic** and **liberate co-designers** of their personal relationship with a **health condition**
- Findings revealed that the co-created personas **encouraged users** with diverse needs **to engage with co-designing**
- additional benefits including **empowering users** within a **more accessible design process**

Approaches for Designing Persona | Co-Created

Co-constructing child personas for health-promoting services with vulnerable children (CHI '14)

- a new method for co-constructing child-personas that are tailored for developing health-promoting services where empirical data is restricted due to practical and ethical reasons
- focus children design **workshop sessions** on salutogenesis, and complement this with a pathogenic perspective by **interviewing healthcare professionals and parents**
- introduce the use of **proxy personas**, and redemption scenarios in the form of **comicboards**, both collaboratively constructed by children and designers through storytelling

Approaches for Designing Persona | Decision Diagram

Revisiting personas: the making-of for special user groups (CHI EA '12)

- **Problems**: The diversity of **special user groups**, i.e. **elderly** from 50 to 90 years and **children** from 6 to 14 years, is huge. **Assessing their requirements** is challenging, as it requires sensitivity in terms of choosing an **appropriate approach to collect data**. Furthermore, the **illustration of the data** for the subsequent design process can be difficult, if different partners are involved in a project.
- **Proposal**: "we are exploring a **decision diagram** for the **creation** of personas. It aims at **identifying the most appropriate approach** (i.e. **qualitative** and/or **quantitative** data collection), taking into account the characteristics of the special user groups among other aspects."

Approaches for Designing Persona | Collaboration Personas

Collaboration personas: a new approach to designing workplace collaboration tools (CHI '11)

- propose the notion of **collaboration personas,** which are empirically derived descriptions of **hypothetical groups**, including details that inform the design of **collaboration tools**
- Collaboration personas differ from individual personas in having
  - multiple, inter-related individuals playing specific roles
  - a focus on collective goals and elaboration of individual goals that affect the collective goal
  - new attributes that characterize collaborative aspects of the group's work

Comparing collaboration and individual personas for the design and evaluation of collaboration software (CHI '12)

- **a comparative study of design and user experience practitioners** who used both **collaboration personas and individual personas**
- **Collaboration personas led to a more complete discussion**, as indicated by a greater amount of time spent on the task compared to individual personas

Approaches for Designing Persona | Collaboration Personas

Emphasizing dysfunctional group dynamics in collaboration personas: specification of an approach (CHI EA '13)

- Built on top of the *Collaboration Personas and Individual Personas for the design and evaluation of collaboration software, Judge, Matthews, and Whittaker (2012)*
- put more emphasis on **problematic** or **dysfunctional group dynamics**
- Outlines improvements to collaboration persona

Approaches for Designing Persona | Self-Determination Theory (SDT)

Personas and Behavioral Theories: A Case Study Using Self-Determination Theory to Construct Overweight Personas (CHI '17)

Personas are a widely used tool to keep real users in mind, while avoiding stereotypical thinking in the design process. Yet, creating personas can be challenging. Starting from Cooper's approach for constructing personas, this paper details how behavioral theory can contribute substantially to the development of personas. We describe a case study in which Self-Determination Theory (SDT) is used to develop five distinctive personas for the design of a digital coach for sustainable weight loss. We show how behavioral theories such as SDT can help to understand what genuinely drives and motivates users to sustainably change their behavior. In our study, we used SDT to prepare and analyze interviews with envisioned users of the coach and to create complex, yet engaging and highly realistic personas that make users' basic psychological needs explicit. The paper ends with a critical reflection on the use of behavioral theories to create personas, discussing both challenges and strengths.

Approaches for Designing Persona | Multiple Identities

Personas and Identity: Looking at Multiple Identities to Inform the Construction of Personas (CHI '19)

Personas are valuable tools to help designers get to know their users and adopt their perspectives. Yet people are complex and multiple identities have to be considered in their interplay to account for a comprehensive representation otherwise, personas might be **superficial** and prone to **activate stereotypes**. Therefore, the way users' identities are presented in a limited set of personas is crucial to account for diversity and highlight facets which otherwise would go unnoticed. In this paper, we introduce an approach to the development of personas informed by **social identity theory**. The effectiveness of this approach is investigated in a qualitative study in the context of the design process for an e-learning platform for women in tech. The results suggest that considering multiple identities in the construction of personas adds value when designing technologies.

Approaches for Designing Persona | Reusable Persona

Towards Reusable Personas for Everyday Design (CHI EA '16)

- "Persona development is rooted in the rigorous collection and analysis of data **specifically related to the design project being undertaken**"
- This paper reports on ongoing research into the development of **reusable personas** for use by **nonexpert, everyday designers** to deal with **small scale but diverse design challenges** for which they cannot carry out user research and modelling
- The proposed reusable persona "represent **populations** and **practices** rather than **people** and **products"**.

Other Approaches for Designing Persona

Persona Perception Scale: Developing and Validating an Instrument for Human-Like Representations of Data (CHI EA '18)

Picturing It!: The Effect of Image Styles on User Perceptions of Personas (CHI '21)

Three Tensions Between Personas and Complex Disability Identities (CHI EA '20)

Towards a Measurement Scale of Organizational Readiness for Personas (CHI EA '21)

Interactive Persona

Interactive Persona

Bot Personas as Off-The-Shelf Users (CHI 17)

Findings of a User Study of Automatically Generated Personas (CHI 18)

Persona Analytics: Implementing Mouse-Tracking for an Interactive Persona System (CHI 21)

Implementing Eye-Tracking for Persona Analytics (CHI 21)

Experiential Persona: Towards Supporting Richer and Unfinalized Representations of People (CHI 21)

Creating More Personas Improves Representation of Demographically Diverse Populations: Implications Towards Interactive Persona Systems (CHI 22)

Personas in action: ethnography in an interaction design team (NordiCHI '02)

Personas and decision making in the design process: an ethnographic case study (CHI '12)

Developing Persona Analytics Towards Persona Science (Non CHI)

Play-persona: a multifaceted concept (Non CHI)

Interactive Persona Types

Chatbot inspired interactive persona

- Bot Personas as Off-The-Shelf Users (CHI 17)

Experiential persona

- Experiential Persona: Towards Supporting Richer and Unfinalized Representations of People (CHI EA '21)

Interactive persona system

- Findings of a User Study of Automatically Generated Personas (CHI 18)
- Creating More Personas Improves Representation of Demographically Diverse Populations: Implications Towards Interactive Persona Systems (NordiCHI '22)

Interactive Persona | Chatbot Inspired

Bot Personas as Off-The-Shelf Users (CHI 17)

- These interactive personas act as **off-the-shelf users**.
- The interactive bot personas is inspired by **chatbots** and provide an **interface for design teams to interact with rich user data** throughout the design process.
- Bot personas use data-driven methods and machine learning to **simulate user behavior**
- "Bot personas, as an **interface** on **rich user data**, give that data a face."
- Practical advantages: **efficiency**, easy and wide **access**, **no incentives required**, offer **scalability**, and provide a **practical alternative to real users.**

Interactive Persona | Experiential Persona

Experiential Persona: Towards Supporting Richer and Unfinalized Representations of People (CHI EA '21)

- The paper presents **Experiential Persona** that consists of a **carefully curated, staged collection of artifacts**, as an alternative to 2D persona
- Experiential Persona allows designers to **interact with and explore the artifacts**, individually and as a collection, **to imagine and experience the world of 'the user'**.
- "This more embodied, interactive and open-ended persona can potentially **support richer sense making; encouraging a more open, emergent, and unfinalized view of people** we design for".

Interactive Persona | Interactive Persona System

Findings of a User Study of Automatically Generated Personas (CHI 18)

- The paper reports on a semi-naturalistic user study of the Automatic Persona Generation (APG) system.
- The research "results show that having an **interactive system** may aid in **keeping personas at the forefront while making customer-centric decisions** and indicate that **data-driven personas fulfill information needs of decision makers by mixing personas and numerical data**".
- The APG system offered **interactive features** that expanded traditional static persona profiles. Users could dynamically **generate and interact with personas, content, and reach metrics**.
- The system supported **real-time data updates** and interactive exploration, allowing users to engage with up-to-date and relevant persona information.

Interactive Persona | Interactive Persona System

Creating More Personas Improves Representation of Demographically Diverse Populations: Implications Towards Interactive Persona Systems (NordiCHI '22)

- The research focused on **a statistically optimal number of personas**.
- The research found that "more personas cover more age groups and countries, thus improving the **statistical correspondence** with the raw user data, and **increasing the representation of demographic diversity** by including more fringe user segments".
- The research "further demonstrate **how an interactive persona system can help stakeholders navigate many personas with possibly smaller cognitive effort**".
- The paper discusses how **interactive systems** can **help stakeholders manage** and **navigate a large number of personas**

Evaluate/Measurement of Interactive Persona Use

Implementing Eye-Tracking for Persona Analytics (CHI 21)

- This research investigated in **users' engagement with interactive persona system**.
- "implementation of online eye-tracking within an interactive persona system, which can be used for studying questions such as:
    - How are personas actually used?
    - What information do users most interact with?
    - How do users browse and select personas?"

Persona Analytics: Implementing Mouse-Tracking for an Interactive Persona System (CHI 21)

- The researcher "introduce and evaluate an **implementation of persona analytics based on mouse tracking**, which offers researchers new possibilities for conducting persona user studies, especially during times when in-person user studies are challenging to carry out".

Summary for Interactive Persona

Advantages

- **Real-Time Updates**: Personas can be continuously updated based on new data, ensuring they remain relevant.
- **Improves Representation of Demographically Diverse:** Creating more persona increases the representation of demographic diversity.
- **Enhanced Accessibility**: Web-based personas can be accessed from any device, facilitating wider usage among design teams.
- **User Interaction**: Interactive features allow users to engage with personas through actions like filtering, sorting, and analyzing specific attributes.

Summary for Interactive Persona

Challenges and Consideration

- Interactive personas often rely heavily on quantitative data. **Balancing quantitative and qualitative data** might provide a more comprehensive overview of the user group.
- Ensuring **data accuracy** and keeping data **up-to-date**
- As interactive persona systems become more detailed and complex, ensuring that they remain **user-friendly** can be challenging.
- **Chat-bot inspired persona** offers an innovative way to provide **interactive and dynamic user representations.** However the application of chat-bot inspired interactive persona has not been thoroughly studied or tested.

Next steps

Action items out of the meeting:

- Add relevant comments to the literature review
- Start writing literature review on Overleaf
- Revist relevant articles in depth

Literature review:

- LLMs and Challenges related to Stereotypes and Biases
- Human-centered design (HCD) phases and use of persona tool in those phases