Master Thesis

An Attention-Adaptive Browser Extension following the Bento Box

Problem Description

The increasing complexity of web content often results in cognitive overload or depleted attention resources for users. This is true across a spectrum of people with diverse attention abilities. Current web interfaces are designed in ways that require users to constantly shift focus and navigate through varied layouts, which can lead to frustration and decreased productivity.

In this thesis project an attention-adaptive browser extension that simplifies web page layouts into a more structured and customizable format is realized. The system will reorganize content into dynamically placed tiles, arranged like a bento box (Japanese Lunch Box), based on the user's attention abilities and content preferences. By following this approach, this tool aims to create a more accessible web browsing experience leading to reduced cognitive load, less frustration and higher productivity.

Goal of Thesis

- Develop a prototype of a browser extension that dynamically transforms web content into tiled layouts.
- Implement an attention-adaptive Web interface that adjusts tile size and content based on users' preferences or abilities.
- Conduct small usability tests to evaluate the impact.
- Provide insights and recommendations for others designing adaptive interfaces.

Requirements

- Reliability and good time management
- Independence in Web Development
- Existing Browser-Extension Development skills **or** will to learn it independently
- Interest to interact with users
- English or German

Contact

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Fig 1. Japanese Bento Lunch Box

Fig 2. Styleframe for a dynamic system based on a Bento layout.