# ChatGPT steps

Writing a literature review involves synthesizing existing research, identifying gaps, and placing your project within the broader academic context. Here's a step-by-step guide on how to start writing your literature review and how to structure it based on your project's scope:

## Step 1: Define Your Research Question

Clearly articulate your research question. For example: "What is the state of the art in open-source, modular stereo camera systems for lifelogging applications, and how can these technologies be leveraged in developing an affordable and accessible system using Raspberry Pi Pico?"

## Step 2: Start Broad and Narrow Down

1. \*\*Start with a General Overview:\*\*

- Begin by introducing the broader field of lifelogging, stereoscopic camera systems, and related technologies.

- Discuss the importance and applications of lifelogging in various domains.

2. \*\*Narrow Down to Specific Areas:\*\*

- Gradually narrow down your focus to open-source stereo camera systems, particularly those utilizing Raspberry Pi Pico.

## Step 3: Identify Key Themes

1. \*\*Hardware Development:\*\*

- Review studies on open-source stereo camera systems.

- Look for research on low-cost and accessible hardware for lifelogging.

- Investigate advancements in wireless connectivity and additional sensor integration.

2. \*\*Software Preprocessing of Video:\*\*

- Explore preprocessing pipelines for transforming mono images and videos into stereoscopic formats.

- Look into audio synchronization for immersive lifelogging experiences.

- Examine metadata tagging and object/scene detection in the context of lifelogging.

3. \*\*VR Software Application:\*\*

- Investigate intuitive VR software applications for seamless file browsing and content viewing.

- Explore research on innovative UI designs tailored for lifelogging VR environments.

- Understand the integration of hand tracking and eye tracking in lifelogging VR applications.

## Step 4: Structure Your Literature Review

1. \*\*Introduction:\*\*

- Introduce the general concept of lifelogging and its significance.

- Clearly state your research question.

2. \*\*Hardware Development:\*\*

- Discuss existing open-source stereo camera systems.

- Review studies on low-cost and accessible hardware.

- Explore advancements in wireless connectivity and additional sensor integration.

3. \*\*Software Preprocessing of Video:\*\*

- Summarize studies on preprocessing pipelines for lifelogging content.

- Examine literature on audio synchronization and metadata tagging for lifelogging.

4. \*\*VR Software Application:\*\*

- Explore research on intuitive VR software applications.

- Discuss UI designs for lifelogging VR environments.

- Investigate the integration of hand tracking and eye tracking in VR for lifelogging.

5. \*\*Conclusion:\*\*

- Summarize key findings.

- Identify gaps in the existing literature.

- Highlight the relevance of your project in addressing these gaps.

## Step 5: Write Clearly and Synthesize Information

- \*\*Use Headings and Subheadings:\*\*

- Organize your literature review using clear headings and subheadings.

- \*\*Synthesize Information:\*\*

- Discuss common themes across different studies.

- Identify patterns, trends, and conflicting findings.

## Step 6: Cite Properly

Ensure that you cite each study properly, following the citation style required by your academic institution or project guidelines.

## Step 7: Review and Revise

Review and revise your literature review multiple times to ensure clarity, coherence, and a logical flow of ideas.

## Step 8: Stay Updated

Periodically revisit your literature review to stay updated on the latest research in the field.

Remember that your literature review is an evolving document that will likely undergo revisions as your project progresses.

# Thematic Analysis

## Lifelogging

1. Gurrin, C., Smeaton, A. F., & Doherty, A. R. (2014). LifeLogging: Personal big data. In *Foundations and Trends in Information Retrieval* (Vol. 8, Issue 1). <https://doi.org/10.1561/1500000033>

Stupidly long and comprehensive:  
Here is a summary of the web page:

- \*\*Part 1: Lifelogging: Personal Big Data\*\*. This section provides an overview of lifelogging, including definitions, concepts, history, pioneers, applications, and future directions.

- \*\*Part 2: The MyLifeBits software\*\*. This section describes the MyLifeBits software, which is a tool developed by Gordon Bell and others at Microsoft Research to store and manage a lifetime's worth of digital data.

- \*\*Part 3: Lifelogging and Big Data\*\*. This section discusses how lifelogging relates to the characteristics of big data applications, such as variety, velocity, volume, and veracity of data sources.

- \*\*Part 4: Lifelogging Annotation and Representation\*\*. This section talks about how lifelog events can be annotated based on indoor location using wireless network access points, such as WiFi and Bluetooth. It also introduces the idea of generating narrative text from lifelog data to represent lifelog events and support keyword search.

- \*\*Part 5: Lifelogging Applications and Use-Cases\*\*. This section presents some of the potential applications and use-cases of lifelogging, such as memory rehabilitation, assisted living, population-based applications, and information retrieval.

- \*\*Part 6: Conclusions and Issues of Lifelogging\*\*. This section discusses the ethical, social, and technical challenges that lifelogging poses, such as privacy, security, data ownership, data quality, data analysis, and user acceptance. It also suggests some possible directions for future research and development in lifelogging, such as improving the capture, storage, and access technologies, developing new applications and use-cases, exploring the cognitive and psychological aspects of lifelogging, and addressing the legal and regulatory implications of lifelogging.

Please note that this is a summary of the web page and may not include all the details or nuances of the original article.

1. Sellen, A. J., & Whittaker, S. (2010). Beyond total capture: A constructive critique of lifelogging. *Communications of the ACM*, *53*(5). <https://doi.org/10.1145/1735223.1735243>

Here is a summary of the web page:

- \*\*Beyond total capture: a constructive critique of lifelogging.\*\*¹[1] The authors challenge the vision of lifelogging as a comprehensive and effortless digital record of one's life experiences. They argue that such a record may not be useful or desirable for supporting human memory.

- \*\*Psychology of memory as a design framework.\*\* The authors propose a new conceptual framework for lifelogging systems that is based on the psychological literature on human memory. They identify different types of memory processes and how they can be supported by different kinds of cues and data.

- \*\*Design principles and research questions.\*\* The authors suggest four design principles for lifelogging systems: strategically targeting the weaknesses of human memory, designing effective retrieval cues, supporting different memory functions, and working in synergy with human memory. They also outline some open research questions for future lifelogging applications.

- \*\*Key insights and implications.\*\* The authors summarize the main insights from their critique and suggest some implications for lifelogging research and practice. They emphasize the need for selectivity, cueing, diversity, and synergy in lifelogging systems, rather than total capture, experience, uniformity, and substitution.

Source: Conversation with Bing, 12/5/2023

1. Beyond tot.... undefined.
2. Kye, B., Han, N., Kim, E., Park, Y., & Jo, S. (2021). Educational applications of metaverse: Possibilities and limitations. In *Journal of Educational Evaluation for Health Professions* (Vol. 18). <https://doi.org/10.3352/jeehp.2021.18.32>

Lifelogging is a type of the metaverse that uses technology to capture, store, and share everyday experiences and information about objects and people. Some of the main points of lifelogging from this page are:

- Lifelogging can be done through social media, wearable devices, and internet of things sensors.

- Lifelogging can help users review and reflect on their daily life, improve their information skills, and get feedback from others on social networks.

- Lifelogging can also help teachers provide customized and data-driven learning support for students based on their learning logs.

- Lifelogging has some challenges such as privacy, security, and ethical issues related to the collection and use of personal data.

1. Hoyle, R., Templeman, R., Armes, S., Anthony, D., Crandall, D., & Kapadia, A. (2014). Privacy behaviors of lifeloggers using wearable cameras. *UbiComp 2014 - Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing*. https://doi.org/10.1145/2632048.2632079

Here is a summary of the current web page:

- The web page is a research paper titled "Privacy Behaviors of Lifeloggers using Wearable Cameras" by Roberto Hoyle et al.

- The paper explores how people manage privacy in the context of lifelogging cameras, which are devices that capture images and other sensor data continuously from a first-person perspective.

- The paper addresses three research questions: how and why people share lifelogging photos, how they control the collection of personal information, and how they respect the privacy of bystanders.

- The paper reports the findings of an in situ user study, in which 36 participants wore a custom lifelogging device for a week and answered questions about the collected images.

- The paper finds that: 1) some people prefer to manage privacy through in situ physical control of image collection rather than limiting image dissemination; 2) the sensitivity of an image is determined by a combination of factors such as time, location, and the objects and people in the photo; and 3) people are concerned about the privacy of bystanders, despite reporting almost no opposition or concerns from them.

: [Privacy Behaviors of Lifeloggers using Wearable Cameras]

1. Duane, A., Jónsson, B. P., & Gurrin, C. (2020). VRLE: Lifelog Interaction Prototype in Virtual Reality: Lifelog Search Challenge at ACM ICMR 2020. *LSC 2020 - Proceedings of the 3rd Annual Workshop on the Lifelog Search Challenge*. <https://doi.org/10.1145/3379172.3391716>

More… in virtual reality section

## Low-Cost Hardware

1. Pagés, R., Amplianitis, K., Monaghan, D., Ondřej, J., & Smolić, A. (2018). Affordable content creation for free-viewpoint video and VR/AR applications. Journal of Visual Communication and Image Representation, 53. <https://doi.org/10.1016/j.jvcir.2018.03.012>
   1. Here is a summary of part 1 of the current page:
      * \*\*Affordable content creation for FVV and VR/AR\*\*: The authors present a scalable pipeline for creating and visualising free-viewpoint video (FVV) content that can be experienced in virtual reality (VR) or augmented reality (AR) using a range of scenarios with a limited number of handheld or fixed consumer cameras.
      * \*\*Related work\*\*: The authors review the existing FVV techniques and classify them into image-based and geometry-based methods. They also discuss the advantages and limitations of each group and highlight the most relevant contributions to their work.
      * \*\*System overview\*\*: The authors describe the main components of their system, which include scene acquisition and preprocessing, scene reconstruction, and visualisation. They introduce novel methods for colour correction, camera pose estimation, multi-source shape-from-silhouette, data fusion, and multi-view colouring.
2. Note: refers to the computation required and data needed compared to SBS, accessibility and feasibility,
3. <https://www.apple.com/newsroom/2023/09/apple-unveils-iphone-15-pro-and-iphone-15-pro-max/>
4. <https://www.theverge.com/2023/11/9/23954310/apple-iphone-15-ios-17-beta-spatial-video-vision-pro>

mentions of spatial video in iphone 15 pro using main and ultrawide camera and image processing.

1. Schroers, C., Bazin, J. C., & Sorkine-Hornung, A. (2018). An omnistereoscopic video pipeline for capture and display of Real-World VR. *ACM Transactions on Graphics*, *37*(3). https://doi.org/10.1145/3225150

Here is a summary of part 1 of the current web page:

- \*\*The goal of the article\*\*: To describe a complete pipeline for the capture and display of real-world VR video content, based on the concept of omnistereoscopic panoramas.

- \*\*The main challenges\*\*: To generate high-quality omnistereo video from a sparse set of cameras, to analyze the required camera array geometry and output stereo parameters, and to integrate omnistereo video with rendered CG content.

- \*\*The proposed solution\*\*: To use image-domain operations to parameterize and interpolate the captured light rays, to provide a detailed analysis of the image formation model and the stereoscopic output parallax, and to discuss additional tools such as multi-perspective projection and virtual head motion.

- \*\*The main contributions\*\*: To demonstrate how omnistereo video can be created from a prototype array with 16 cameras, to provide a first complete guide and analysis for reimplementing a system for capturing and displaying real-world VR, and to show several real-world video panoramas with support for real-time stereoscopic viewing and head motion.

NOTES: talk about the complexity and cost compared to normal stereo camera.. 2 vs 16 cameras

## Stereo Camera

1. <https://www.apple.com/newsroom/2023/09/apple-unveils-iphone-15-pro-and-iphone-15-pro-max/>
2. <https://www.theverge.com/2023/11/9/23954310/apple-iphone-15-ios-17-beta-spatial-video-vision-pro>

mentions of spatial video in iphone 15 pro using main and ultrawide camera and image processing.

1. <https://www.apple.com/uk/newsroom/2023/06/introducing-apple-vision-pro/>

apple vision pro

1. Schroers, C., Bazin, J. C., & Sorkine-Hornung, A. (2018). An omnistereoscopic video pipeline for capture and display of Real-World VR. *ACM Transactions on Graphics*, *37*(3). https://doi.org/10.1145/3225150

More in lowcost section

NOTES: talk about the need for more software computation to sync compared to stereo but it is still stereo so good.

## Virtual Reality (VR)

1. Zarka, O. M., & Shah, Z. J. (2016). Virtual Reality Cinema: A Study. *IJRAR- International Journal of Research and Analytical Reviews*, *3*(2).

Here is a summary of the web page you have open in your Microsoft Edge browser:

- \*\*Virtual Reality Cinema: A Study\*\*: This is a research paper that explores the concept and potential of VRC, which is a combination of virtual reality and cinema.

- \*\*VRC Challenges and Opportunities\*\*: The paper discusses the challenges of making VRC accessible, affordable, and appealing to the public, as well as the opportunities of creating immersive and interactive cinematic experiences with VR technology.

- \*\*VRC Examples and Devices\*\*: The paper provides some examples of VRC projects and ventures, such as the VR theaters in Holland and Germany, and the Apollo 11 VR experience. It also describes some of the VR devices and equipment that are used for VRC, such as the Oculus Rift, the Samsung Gear VR, the Fove VR, and the Avegant Glyph.

- \*\*VRC Future and Conclusion\*\*: The paper concludes that VRC is a powerful and innovative idea that will transform the cinematic experience and the film industry, and that it will become a necessity in every house and theater in the future.

1. Duane, A., Jónsson, B. P., & Gurrin, C. (2020). VRLE: Lifelog Interaction Prototype in Virtual Reality: Lifelog Search Challenge at ACM ICMR 2020. *LSC 2020 - Proceedings of the 3rd Annual Workshop on the Lifelog Search Challenge*. https://doi.org/10.1145/3379172.3391716

Here is a summary of the web page:

- \*\*VRLE: A Virtual Reality Lifelog Explorer\*\* - The paper introduces a novel prototype for interactive retrieval of lifelog data in a virtual environment, using gesture-based interaction and event-based visualisation¹[1].

- \*\*Background and Motivation\*\* - The paper reviews the existing research on lifelog retrieval and virtual reality applications, and argues that virtual reality platforms offer a more immersive and intuitive way to explore lifelogs.

- \*\*User Interface and Interaction\*\* - The paper describes the design and implementation of the 3D user interface for generating filter queries based on concepts and temporal aspects, and compares two interaction paradigms: distance-based and contact-based.

- \*\*Data Visualisation and Search Engine\*\* - The paper explains the methodology for ranking and visualising events based on a search engine provided by Duyen et al. [9], and introduces a contextual interface for exploring events and images in detail²[2].

- \*\*Conclusion and Future Work\*\* - The paper summarises the main contributions of the VRLE prototype and outlines the plans for evaluating its effectiveness and developing novel techniques for lifelog retrieval in virtual reality.

Source: Conversation with Bing, 12/6/2023

(1) In this pa.... undefined.

(2) The genera.... undefined.

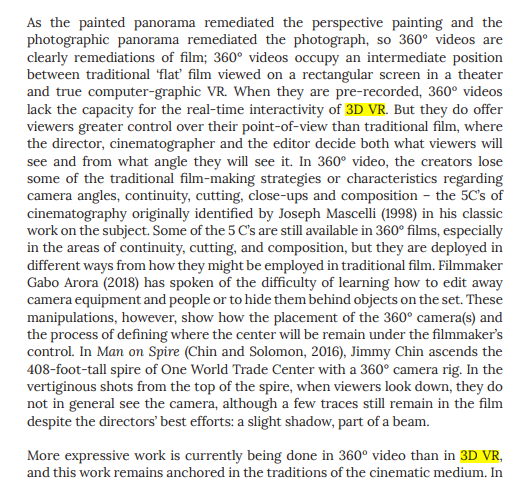
NOTES: useful for referencing tom idea of using game design like bookshelf of memory timeline, or talking about my idea of using the whole 3d space for more ui space.

1. Schroers, C., Bazin, J. C., & Sorkine-Hornung, A. (2018). An omnistereoscopic video pipeline for capture and display of Real-World VR. ACM Transactions on Graphics, 37(3). <https://doi.org/10.1145/3225150>

More in lowcost section

NOTES: talk about how its still 3DOF even with much effort and camera, and not scalable for content creation, especially lifelogging.

1. Engberg, M., & Bolter, J. D. (2020). The aesthetics of reality media. *Journal of Visual Culture*, *19*(1). <https://doi.org/10.1177/1470412920906264>



Callenbach, E. (1966). : The Five C’s of Cinematography: Motion Picture Filming Techniques Simplified . Joseph V. Mascelli. Film Quarterly, 19(4). https://doi.org/10.1525/fq.1966.19.4.04a00320

NOTES: talk about even most journals and media, even academic papers don’t make difference between stereo 360 or just 360 which latter is abundant, but unimpressive due to lack of depth effect., here it refers 3D VR towards interactive game like VR experience that renders in real time.

1. Dodgson, N. A. (2005). Autostereoscopic 3D displays. Computer, 38(8), 31–36. <https://doi.org/10.1109/MC.2005.252>

NOTES: explain type of stereoscopic display like VR and 3DS, autostereoscopic.