

Master Thesis Topics

Chair of Marketing & Customer Insight

(Topics subjected to change and are specified with your respective supervisor)

LLM-based Dialogue Systems for Psychological Assessments

AI-driven dialogue systems are opening new possibilities for understanding how people behave in conversations, conflicts, and interpersonal situations. Traditional evaluation scales rely heavily on self-assessment or the manual analysis of participants' responses - such as word choice, emotional tone, or topic focus. With modern conversational AI, however, we can simulate highly personalized, realistic discussion partners and capture behavioural signals in a controlled yet naturalistic way.

This master's thesis gives you the opportunity to explore this emerging approach. You will develop an LLM-based dialogue system that can be used as an experimental tool for behavioural research. The final system should be easy to deploy and openly accessible for other researchers. In addition, you will design and run empirical studies to test the reliability and comparability of AI-mediated behavioural measurements, both within groups and in comparison to traditional evaluation methods.

This thesis can be written in either English or German.

If you are comfortable working with LLMs, please contact

Robin Frasch, robin.frasch@uni-hamburg.de

Related Literature:

- Kjell, O. N. E., Kjell, K., & Schwartz, H. A. (2024). *Beyond rating scales: With targeted evaluation, large language models are poised for psychological assessment*. *Psychiatry Research*, 333, 115667. <https://doi.org/10.1016/j.psychres.2023.115667>
- D. Dumas, S. Greiff, and E. Wetzel, "Ten Guidelines for Scoring Psychological Assessments Using Artificial Intelligence," *European Journal of Psychological Assessment*, vol. 41, no. 3, pp. 169–173, May 2025, doi: 10.1027/1015-5759/a000904.
- Ke, L., Tong, S., Cheng, P. et al. *Exploring the frontiers of LLMs in psychological applications: a comprehensive review*. *Artif Intell Rev* 58, 305 (2025). <https://doi.org/10.1007/s10462-025-11297-5>
- Ravenda, F., Preti, A., Poletti, M. et al. *Rethinking psychometrics through LLMs: how item semantics shape measurement and prediction in psychological questionnaires*. *Sci Rep* 15, 37313 (2025). <https://doi.org/10.1038/s41598-025-21289-8>

AI-based Election Manipulation and How to Defend Against it

AI is rapidly transforming the landscape of political influence - and with it, the vulnerabilities of modern democracies. While election manipulation has a long history, the speed, scale, and sophistication enabled by AI tools introduce entirely new risks. From automated persuasion systems to subtle data poisoning techniques, AI-driven methods could surpass traditional manipulation strategies in both reach and impact.

This master's thesis offers you the opportunity to explore these emerging threats in depth. You will investigate how AI could be weaponized as a destabilizing force, examining methods such as adversarial machine learning, training-data manipulation, and the large-scale deployment of powerful political bots. Approaching the problem from a red-team perspective, you will map out realistic attack vectors that democratic societies may soon face. Building on these insights, you will then focus on practical defense strategies. This includes designing and implementing countermeasures, developing evaluation metrics, and empirically testing how well different protection mechanisms mitigate the identified risks.

This thesis can be written in either English or German and could potentially support two students. So, if you want to tackle this with a friend and go red-team/blue-team, please reference that in your application.

If you are confident in your coding skills and are interested in strengthening democratic resilience against emerging AI-driven threats, please get in touch with

Robin Frasch, robin.frasch@uni-hamburg.de

Related Literature:

- Romanishyn A, Malytska O, Goncharuk V. *AI-driven disinformation: policy recommendations for democratic resilience*. *Front Artif Intell*. 2025 Jul 31;8:1569115. doi: 10.3389/frai.2025.1569115. PMID: 40821951; PMCID: PMC12351547.
- Panditharatne, M., & Hasan, S. (2024, May 16). *How to detect and guard against deceptive AI-generated election information*. Brennan Center for Justice. <https://www.brennancenter.org/our-work/research-reports/how-detect-and-guard-against-deceptive-ai-generated-election-information>
- Sam Stockwell, Megan Hughes, Phil Swatton and Katie Bishop, "AI-Enabled Influence Operations: The Threat to the UK General Election," CETaS Briefing Papers (May 2024).
- Federal Ministry of the Interior (BMI). (2025, January 22). *Disinformation and discreditation campaigns, cyber attacks, espionage and sabotage: Protecting the 2025 Bundestag elections from hybrid threats*. <https://www.bmi.bund.de/SharedDocs/schwerpunkte/EN/disinformation-election/disinformation-election-artikel.html>

Implications of Agentic Commerce – A Technical Framework

Agentic AI systems are opening new possibilities for how consumers discover, evaluate, and purchase products and services. Instead of interacting with isolated recommendation systems or search interfaces, users can increasingly rely on AI agents that act as personalized concierges: systems with deep knowledge of individual preferences, goals, and constraints that proactively support decision-making and delegate parts of the purchasing process. Prior research suggests that such agents can have positive psychological effects, for example by reducing cognitive load, increasing perceived autonomy, and enhancing satisfaction and trust in complex choice environments.

This master's thesis gives you the opportunity to explore this emerging technology from a technical and conceptual perspective. Building on existing work you will design and develop a framework that structures the interaction between agentic systems and current suppliers of products and services. The goal is to identify how agent-based commerce can be leveraged in a way that creates value for users, platform providers, and suppliers alike.

Your work will focus on the technical architecture and interaction mechanisms required for such an ecosystem, including questions of information access, preference representation, delegation of actions, and coordination between agents and supplier systems. Depending on your interests, the thesis may include prototypical implementations, simulations of agent–supplier interactions, or empirical evaluations of user experience and perceived benefits in agent-supported commerce scenarios.

This thesis can be written in either English or German.

If you are interested, please get in touch with

Robin Frasch, robin.frasch@uni-hamburg.de

Related Literature:

- Allouah, A., Besbes, O., Figueroa, J. D., Kanoria, Y., & Kumar, A. (2025). *What Is Your AI Agent Buying? Evaluation, Implications and Emerging Questions for Agentic E-Commerce* (No. arXiv:2508.02630). arXiv. <https://doi.org/10.48550/arXiv.2508.02630>
- Rothschild, D. M., Mobius, M., Hofman, J. M., Dillon, E. W., Goldstein, D. G., Immorlica, N., Jaffe, S., Lucier, B., Slivkins, A., & Vogel, M. (2025). *The Agentic Economy (Version 2)*. arXiv. <https://doi.org/10.48550/ARXIV.2505.15799>
- Schumacher, K., & Roberts, R. (o. J.). *Agentic AI promises to radically remake the entire shopping experience. Here's a glimpse into the near future—And what merchants, players, and platforms need to know in order to thrive.*

Implications of Agentic Commerce – A Psychological View

AI agents are beginning to take an active role in consumer decision-making—from searching for information and comparing alternatives to recommending products and completing purchases. While this may reduce effort and simplify complex choices, it also raises broader psychological questions. How does agentic commerce change the way consumers search, decide, and buy? When does AI support thoughtful decision-making, and when might it encourage impulsive behavior, overreliance, or reduced engagement? How do consumers respond when an AI agent influences, delegates, or fully executes a purchase?

This thesis explores the psychological implications of agentic AI in consumer contexts. Possible topics include perceived control and responsibility, trust, decision satisfaction, regret, impulse purchasing, choice overload, autonomy, reliance on recommendations, and willingness to delegate. The project may also examine how factors such as AI autonomy, transparency, personalization, or communication style shape consumer responses and purchasing behavior.

Depending on your interests, the thesis may involve developing conceptual frameworks, reviewing the emerging literature, designing agent-based scenarios, or conducting experiments and simulations. Students are strongly encouraged to develop their own research ideas and to focus on the psychological mechanisms or consumer behaviors they find most interesting..

This thesis can be written in either English or German and may have a literature-based or empirical focus.

If you are interested, please get in touch with:

Magdalena Heynickemagdalena.heynicke@uni-hamburg.de

Related Literature:

- Schumacher, K., & Roberts, R. (n.d.). *Agentic AI promises to radically remake the entire shopping experience: Here's a glimpse into the near future—and what merchants, players, and platforms need to know in order to thrive.*
- Simonson, I. (1992). *The influence of anticipating regret and responsibility on purchase decisions.* *Journal of Consumer Research*, 19(1), 105–118.
- Branco, F., Sun, M., & Villas-Boas, J. M. (2016). *Too much information? Information provision and search costs.* *Marketing Science*, 35(4), 605–618.
<https://doi.org/10.1287/mksc.2015.0959>.

Can Voice Reveal Choice Overload? – Measuring Decision Difficulty through Voice Analytics

Consumers are faced with an increasing number of choices, from selecting products online to comparing financial or healthcare options. While a wide range of alternatives can improve decision quality, it may also lead to choice overload—a state of cognitive burden that makes decisions more difficult and less satisfying. Existing research primarily relies on self-report questionnaires and behavioral measures, such as decision time or choice satisfaction, to assess this phenomenon. However, these approaches may not fully capture the underlying cognitive and emotional processes experienced during decision making.

This thesis investigates whether voice analytics can provide a novel and more objective way to measure choice overload. Specifically, it explores whether vocal characteristics such as hesitation, speech fluency, pauses, and vocal tension reflect the cognitive load associated with making difficult choices. The project aims to validate voice-based measures by comparing them with established indicators of choice overload in a controlled experimental setting.

The thesis will involve designing and conducting an experiment based on a classic choice overload paradigm, collecting voice recordings during decision making, and analyzing whether acoustic features provide additional insights beyond traditional self-report measures. The project combines consumer behavior, psychology, and AI-driven voice analytics and offers the opportunity to work with modern speech analysis methods.

This is an empirical thesis and will be written in English.

If you are interested, please get in touch with

Magdalena Heynicke magdalena.heynicke@uni-hamburg.de

Related Literature:

- Iyengar, S. S., & Lepper, M. R. (2000). *When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?* *Journal of Personality and Social Psychology*, 79(6), 995–1006.
- Scheibehenne, B., Greifeneder, R., & Todd, P. M. (2010). *Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload.* *Journal of Consumer Research*, 37(3), 409–425.
- Schuller, B. W., Batliner, A. (2014). *Computational Paralinguistics: Emotion, Affect and Personality in Speech and Language Processing.* Wiley.

Generative AI for Effective Video Advertising: Effective Storytelling in Shortform Content

Short-form video on TikTok, Instagram Reels, and YouTube Shorts have taken over the premiere spot of video-based advertising. Decades of advertising research have uncovered what separates ads people remember from ads people scroll past: pacing and narrative structure, emotional versus informational appeals, the timing of brand integration, the role of humor and surprise, and how all of this shifts with context, since a linear TV spot demands something very different from a 6-second bumper or a scroll-stopping Reel. Generative AI now makes it possible to produce professional-looking video at a fraction of the usual cost and time, but access to powerful tools does not automatically produce effective advertising. This thesis asks a timely question: what does the research actually say makes video ads work, and can that knowledge be turned into concrete guidance for generative AI video creation?

The thesis has two parts. First, you will build a structured overview of the advertising effectiveness literature, spanning classic TV and broadcast research, digital and social media advertising, and the newer wave of work on short-form, algorithmically curated video. From this you distill the key drivers of ad effectiveness, for example attention capture, narrative and pacing, emotional versus rational appeals, brand prominence and placement, authenticity, and platform-native versus polished production style, into a clear and usable framework. Second, you put that framework to work by generating new video ads with Generative AI video tools such as Veo, Sora, or Runway, translating research-based principles into concrete creative and production choices. This is a chance to work hands-on with the most exciting creative tools available today while grounding your choices in real theory. No prior AI or programming knowledge is required. The generative AI video tools used here work through simple text prompts and intuitive interfaces, not code, and you will be supported in getting up to speed.

The thesis can be written in German or English. For more information, please contact

Maximilian Witte

maximilian.witte@uni-hamburg.de

Related Literature:

- Heitmann, M., Jansen, T. P. J., Reisenbichler, M., & Schweidel, D. A. (2025). *Picture Perfect: Engaging Customers with Visual Generative AI*. *Journal of Marketing*, 00222429251356993. <https://doi.org/10.1177/00222429251356993>
- Kapoor, A., & Kumar, M. (2025). *Frontiers: Generative AI and Personalized Video Advertisements*. *Marketing Science*, 44(4), 1–15. <https://doi.org/10.1287/mksc.2023.0494>
- Matz, S. C., Teeny, J. D., Vaid, S. S., Peters, H., Harari, G. M., & Cerf, M. (2024). *The potential of generative AI for personalized persuasion at scale*. *Scientific Reports*, 14(1), 4692. <https://doi.org/10.1038/s41598-024-53755-0>

The Future of Automotive Design

Few products are as emotionally charged as a car. Aesthetic perception plays a central role in consumer decisions, especially in industries where form and emotion are tightly interwoven, and the automotive sector is a prime example. The visual appeal of a car, its proportions, surface treatments, and signature elements, can strongly shape purchase behavior, brand perception, and long-term loyalty. These aesthetic elements have historically evolved through a mix of engineering constraints, cultural trends, and the creative vision of human designers. New technologies are now poised to reshape that process: generative AI tools can rapidly produce and iterate on visual concepts, computational design methods can explore vast design spaces far beyond what any human team could sketch by hand, and AI-assisted workflows are already being piloted by design studios and automotive OEMs to accelerate concept generation and explore new stylistic directions.

This opens up genuinely open questions with both academic and practical weight. How is generative AI changing the automotive design process itself, from ideation to prototyping to consumer testing? Will AI-assisted design converge on a few aesthetic attractors, or expand the diversity of forms on the road? This master's thesis takes the form of a structured literature search and synthesis, bringing together research and industry perspectives on the future of automotive design in light of new technologies such as generative AI. You will map the current state of knowledge across relevant streams, for example design research, consumer aesthetics, human-AI creative collaboration, and industry practice and case studies, and develop a coherent point of view on where the field is heading, what remains unresolved, and what it means for designers, brands, and consumers.

If you would prefer a more empirical angle, the topic can also be converted into an empirical thesis, for example a survey or experiment on how consumers respond to AI-generated or AI-assisted design, without any AI programming of your own.

The thesis can be written in German or English. For more information, please contact

Maximilian Witte

maximilian.witte@uni-hamburg.de

Related Literature:

- Feng, X. (Flora), Li, C., & Zhang, S. (2023). *Visual Uniqueness in Peer-to-Peer Marketplaces: Machine Learning Model Development, Validation, and Application* (SSRN Scholarly Paper No. 5087850). Social Science Research Network. <https://doi.org/10.2139/ssrn.5087850>
- Homburg, C., Schwemmler, M., & Kuehnl, C. (2015). *New Product Design: Concept, Measurement, and Consequences*. *Journal of Marketing*, 79(3), 41–56. <https://doi.org/10.1509/jm.14.0199>
- Liu, Y., Li, K. J., Chen, H. (Allan), & Balachander, S. (2017). *The Effects of Products' Aesthetic Design on Demand and Marketing-Mix Effectiveness: The Role of Segment Prototypicality and Brand Consistency*. *Journal of Marketing*, 81(1), 83–102. <https://doi.org/10.1509/jm.15.0315>

What Makes Content Work on TikTok? Utility of Communication in Shortform Social Media Content

Not all effective social media content works the same way. A tutorial builds trust through competence, a day-in-my-life video creates emotional closeness through authenticity, and a trend-driven duet signals identity and belonging. Classic consumer value frameworks distinguish exactly these kinds of value, symbolic and social, utility and functional, and experiential and emotional, but they were developed long before short-form, algorithmically distributed video became the dominant mode of brand and creator communication. TikTok is a fascinating place to revisit these ideas at scale: a single creator's feed, and sometimes a single video, can swing from tutorials and product explanations (utility) to POV trends and lifestyle content (symbolic) to unfiltered personal storytelling (experiential).

This master's thesis empirically investigates which of these value dimensions, symbolic, utility, and experiential, drive effective communication on TikTok, and under what conditions each one wins, using a large TikTok dataset already available at the chair. No prior AI or programming knowledge is required to take on this topic. You will be supported through the technical steps, and the modeling can be handled with guided, template-based workflows rather than from-scratch coding.

This thesis is a great fit for students drawn to consumer psychology who also want to see how those ideas play out in real, large-scale social media data. If you enjoy connecting established theory to the content you already scroll through every day, this topic offers exactly that.

The thesis can be written in German or English. For more information, please contact

Maximilian Witte

maximilian.witte@uni-hamburg.de

Related Literature:

- Berger, J., Kim, Y. D., & Meyer, R. (2021). *What Makes Content Engaging? How Emotional Dynamics Shape Success*. *Journal of Consumer Research*, 48(2), 235–250. <https://doi.org/10.1093/jcr/ucab010>
- Feiereisen, S., Rasolofoarison, D., Russell, C. A., & Schau, H. J. (2021). *One Brand, Many Trajectories: Narrative Navigation in Transmedia*. *Journal of Consumer Research*, 48(4), 651–681. <https://doi.org/10.1093/jcr/ucaa046>
- Ringler, C., Sirianni, N. J., Peck, J., & Gustafsson, A. (2024). *Does your demonstration tell the whole story? How a process mindset and social presence impact the effectiveness of product demonstrations*. *Journal of the Academy of Marketing Science*, 52(2), 512–530. <https://doi.org/10.1007/s11747-023-00934-6>

Measuring Firm-Level AI Usage and Its Impact on Firm Performance

Artificial intelligence (AI) has rapidly evolved into one of the most important technological developments shaping modern business. Firms increasingly integrate AI into a wide range of activities, including product development, customer service, marketing, operations, and strategic decision-making. While substantial investments in AI technologies are expected to enhance organizational efficiency and competitiveness, empirical evidence regarding the economic value of AI remains limited. In particular, it is still unclear whether and to what extent firms that make greater use of AI achieve superior financial performance.

A major challenge in this context concerns the measurement of AI usage at the firm level. Existing studies often rely on simplistic indicators such as AI-related patents, announcements, or survey data, each of which captures only specific aspects of AI adoption and suffers from important limitations. Recent advances in data availability and artificial intelligence itself, however, provide new opportunities to develop more comprehensive and scalable measures of firm-level AI usage based on publicly available information such as annual reports, job postings, earnings call transcripts, or corporate websites.

The objective of this master's thesis is to develop a measure of firm-level AI usage and to examine its impact on firm performance. The first part of the thesis focuses on constructing and validating an AI usage measure using modern text analysis and/or machine learning techniques. The second part investigates whether firms with higher levels of AI usage achieve superior performance, with a particular emphasis on stock market performance. Using panel data and appropriate econometric methods, the thesis aims to provide new insights into whether and how the adoption of AI creates shareholder value.

For more information, please contact Dr. Thomas Schreiner

thomas.schreiner@uni-hamburg.de

Related Literature:

- Mu, J., & Zhang, J. Z. (2025). *Artificial intelligence marketing usage and firm performance*. *Journal of the Academy of Marketing Science*, 53(4), 1081–1134.
- Mishra, S., Ewing, M. T., & Cooper, H. B. (2022). *Artificial intelligence focus and firm performance*. *Journal of the Academy of Marketing Science*, 50(6), 1176–1197.
- Lee, C. C., Zou, J., & Chen, P. F. (2025). *The impact of artificial intelligence on the energy consumption of corporations: The role of human capital*. *Energy Economics*, 143, 108231.

For Whom Does Talking Help? – Individual Differences as Boundary Conditions of Voice-Based Human-AI Collaboration

When people collaborate with AI systems to generate ideas or content, the modality of interaction matters: speaking to an AI imposes different cognitive demands than typing to it, and emerging research suggests that spoken interaction can reduce cognitive load and improve the quality of what people produce. But an average effect rarely tells the whole story. Speaking out loud may free some people to think more fluently, while for others – those who are more at home organizing their thoughts on the page – it may add friction rather than remove it. The central question of this thesis is therefore not whether voice helps on average, but for whom it helps, and for whom it does not.

This master's thesis gives you the opportunity to test individual differences as boundary conditions of the modality effect in human-AI collaboration. In an online experiment, participants generate ideas or marketing content with an AI system either by voice or in writing, while you measure candidate moderators such as verbal working memory capacity, need for cognition, or trait introversion/extraversion. The core analysis is a moderation design: does the voice advantage shrink, vanish, or even reverse for highly verbal or text-oriented thinkers, and is this pattern explained by differences in cognitive load? A clear moderator would refine an emerging effect into an actionable design principle; an informative null would still sharpen the boundary conditions of the phenomenon.

This thesis is empirically demanding and suited to students comfortable with experimental design and moderation/mediation analysis. It can be written in either English or German.

If you are interested, please get in touch with

Claus Hegmann-Napp, claus.hegmann@uni-hamburg.de

Related Literature:

- Sweller, J. (2011). *Cognitive load theory*. In *Psychology of Learning and Motivation* (Vol. 55, pp. 37–76). Academic Press. <https://doi.org/10.1016/B978-0-12-387691-1.00002-8>
- Cacioppo, J. T., & Petty, R. E. (1982). *The need for cognition*. *Journal of Personality and Social Psychology*, 42(1), 116–131. <https://doi.org/10.1037/0022-3514.42.1.116>
- Baddeley, A. (2003). *Working memory and language: An overview*. *Journal of Communication Disorders*, 36(3), 189–208. [https://doi.org/10.1016/S0021-9924\(03\)00019-4](https://doi.org/10.1016/S0021-9924(03)00019-4)
- Schroeder, J., & Epley, N. (2016). *Mistaking minds and machines: How speech affects the way we perceive humans and computers*. *Journal of Experimental Psychology: General*, 145(11), 1427–1437. <https://doi.org/10.1037/xge0000214>

Labeled as AI – How Disclosure Shapes Consumer Responses to AI-Generated Advertising

Generative AI can now produce advertising content that is difficult to distinguish from human-made work – which raises a pressing question for brands and regulators alike: what happens when consumers are told that an ad was created by AI? Disclosure may erode perceived authenticity and trust, or it may signal innovation and transparency; it may dampen emotional responses, or leave them untouched once the content itself is judged. As AI-disclosure requirements move onto the regulatory agenda in several markets, understanding the behavioral consequences of labeling is both theoretically interesting and practically urgent.

This master's thesis gives you the opportunity to examine the disclosure effect empirically. In an online experiment, participants are exposed to advertising content that is either labeled as AI-generated or not, while the underlying content is held constant. You will measure consumer responses such as perceived authenticity, trust, ad attitude, and word-of-mouth intention. The most valuable contribution lies in moving beyond a simple main effect toward moderators and mechanisms: does the disclosure penalty depend on product category (hedonic vs. utilitarian), on the timing or framing of the label, or on the consumer's prior attitudes toward AI? Identifying when and why disclosure helps or hurts would advance a fast-growing but still fragmented literature.

This thesis suits students interested in consumer psychology and experimental advertising research. It can be written in either English or German.

If you are interested, please get in touch with

Claus Hegmann-Napp, claus.hegmann@uni-hamburg.de

Related Literature:

- Arora, N., Chakraborty, I., & Nishimura, Y. (2024). *AI-Human Hybrids for Marketing Research: Leveraging Large Language Models as Collaborators*. *Journal of Marketing*, 88(3), 267–289. <https://doi.org/10.1177/00222429241276529>
- Luo, X., Tong, S., Fang, Z., & Qu, Z. (2019). *Frontiers: Machines vs. humans – The impact of artificial intelligence chatbot disclosure on customer purchases*. *Marketing Science*, 38(6), 937–947. <https://doi.org/10.1287/mksc.2019.1192>
- Longoni, C., Bonezzi, A., & Morewedge, C. K. (2019). *Resistance to medical artificial intelligence*. *Journal of Consumer Research*, 46(4), 629–650. <https://doi.org/10.1093/jcr/ucz013>
- Castelo, N., Bos, M. W., & Lehmann, D. R. (2019). *Task-dependent algorithm aversion*. *Journal of Marketing Research*, 56(5), 809–825. <https://doi.org/10.1177/0022243719851788>