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Use of artificial intelligence within the gambling field

Ståle Pallesen, Elise Constance Fodstad, Conchita Sisí, Farangis Sharifibastan, Rune Krumsvik, Hailemariam Weldemariam

Norwegian Competence Center for Gambling and Gaming Research

UNIVERSITY OF BERGEN
Faculty of Psychology

BERGEN ADDICTION RESEARCH GROUP
Faculty of Psychology | University of Bergen

Background

- Gambling involves staking money or other valuables on the outcome of a game or event determined, partially or entirely, by chance *(Bolen et al., 1968)*

- In 2023 , the global gambling market was valued at approximately $540 billion, and is expected to grow 6.4% annually, driven by factors such as legalization, urbanization, increased social media use, and a rising population https://www.thebusinessresearchcompany.com/report/gambling-global-market-report
- Technological advancements (e.g., AI) are boosting online gambling channels, including gambling apps and online casinos (*market research report (2014-2029*)

- AI refers to computer systems that automatically perform complex tasks such as perceiving, reasoning, decision making, problem-solving, and learning, which require intelligence when conducted by humans *(Abbass, 2021; Russell, 2021; Winston PH, 1992)*

- AI's technologies mine data, learn, recognize speech and images, and analyze cognitions and emotions *(Abbass, 2021)*

Background

AI for early detection and prevention of problematic gambling

- **Auer & Griffiths (2023)** developed machine learning algorithms that predicted self-reported gambling problems.
- Machine learning used to predict early behaviours indicating potential high-risk gambling (**Auer & Griffiths, in press**).
- Predict serious gambling-related outcomes, such as suicidal ideation and suicide attempts (**Mohajeri et al., 2024**).

VS

Business optimization and Industry Perspective

- AI can collect and analyze consumer data in real-time to maximize market understanding and customer engagement (**Dos Santos, 2015**).
- Predict bet amounts and cumulative winnings/losses (**Chan, 2010**).

Background

Critical and Ethical Considerations

Criticism regarding responsible gambling initiatives placing too much responsibility on individuals (**Reynolds et al., 2020**).

Although AI holds promise for consumer protection, it also inherently risks increasing player exploitation (**Ghaharian et al., in press**).

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A MULTI-PHASE PROJECT ON AI IN THE GAMBLING FIELD

Unclear evidence about the combination of Gambling and AI. Growing relevance and ⚠ scarce consolidated knowledge

🎯To build a comprehensive understanding of how AI is transforming gambling practices and to inform evidence-based regulation and consumer protection strategies.

Conduct a **scoping review** to map studies where AI-based tools have been used within the gambling field, areas of use as well as current trends and findings.

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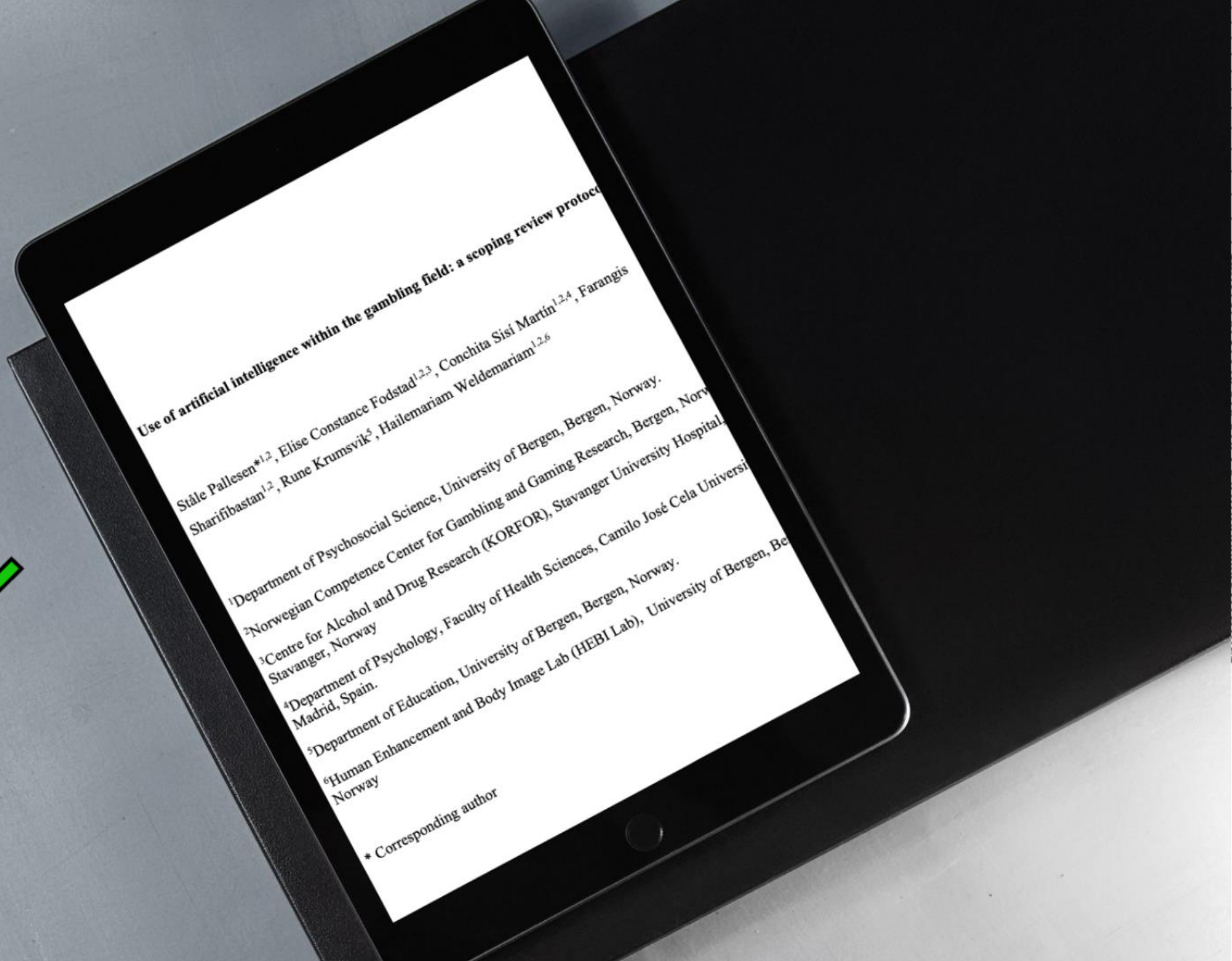
SCOPING REVIEW PROTOCOL



SCOPING REVIEW: objectives

🎯1) How are AI-technology and AI-tools used (purposes) within the gambling field?

🎯2) What characterizes the AI-models used, what are the trends in terms of AI-technology use and what are the main findings?

CONCEPT
The use of AI-tools within the gambling field.
Computer systems that automatically accomplish complex tasks such as reasoning and decision making that would require intelligence when conducted by humans

CONTENT (PARTICIPANTS)
No specific criteria

CONTEXT
The use of AI-tools within the field of gambling. Quantitative studies, gambling-related (not gaming), English only. Studies focusing solely on gamblers' attitudes toward AI features without actual AI implementation will be excluded

PsycINFO, Web of Science, and Google Scholar. Medline (Ovid), ProQuest, CINAHL, and Wiley Online Library.

Artificial intelligence" and relevant subcategories ("machine learning", "deep learning", "reinforcement learning", "neural networks", "natural language processing", "NLP", "supervised learning", "unsupervised learning", "decision trees", "probabilistic models", "Bayesian network", "Extreme Gradient Boosting", "XGBoost", "Generative Adversarial Network", "GANs", "CatBoost", and "Random Forest") combined with the term gambl*).

PRISMA for Scoping Reviews (PRISMA-ScR), (Tricco et al., 2018)

JBI Guidelines for Evidence Synthesis for Scoping Reviews (Peters et al., 2020)

1) Scoping review protocol ✔ (currently under review)

2) Scoping review

3) Further steps

- Inform policy makers
- Address new treatments
- Empirical studies
- Further inform on research gaps
- Recommendations for responsible AI use in gambling

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Thank you for your attention!

Staale.pallesen@uib.no

elise.constance.fodstad@sus.no

conchita.sisi.martin@uib.no

farangis.sharifibastan@uib.no

rune.johan.krumsvik@uib.no

hailemariam.weldemariam@uib.no