How Venture Capital Can Unleash the Power of ChatGPT to Create a Sustainable Future

If you had 100 million dollars, how would you invest to create the most positive impact on society and the environment? Venture capital is frequently brought up as a driving force of systematic change in society and the investing form that can create the biggest impact. Yet, the integration of sustainability in venture capital has until recently largely been overlooked, only now are firms starting to recognize its potential. With the introduction of OpenAI's revolutionary model ChatGPT, the things we thought were possible to achieve with artificial intelligence were propelled to another level. ChatGPT already has broad applications, spanning from code generation and essay writing to even aiding investment decisions. We propose that with the help of ChatGPT, venture capital firms can finally embrace sustainability as an integral part of their business model, helping them to identify startups that maximize impact.

Undoubtedly, investing in sustainable companies is paramount for solving the world's social and environmental crisis. Venture capitalists' (VCs) unique strategy, inclination towards short-term investments in high-growth ventures, has traditionally posed challenges for VCs incorporating impact investing. This is due to capital-intensive, long-term investments such as solar cells being on top of the sustainability agenda. By leveraging their existing capabilities to support high-risk, software-centric companies that drive sustainable system change, we argue that VCs can carve out a new, more appropriate space within impact investing. This novel and specific investing scope, requires a more sophisticated screening process than what is in place today. By harnessing the power of ChatGPT, our hypothesis was that VCs could refine and improve their way of identifying high-potential startups, and in turn find hidden gems in the impact space.

To test our hypothesis, we performed a study on ChatGPT's ability to identify and differentiate the impact startups with the highest potential. By defining investor preferences (market, technology, founding team and sustainability) in a text, the model was then asked to rank the similarities of the investor profile and investment prospects. In addition, relevant company specific information was input in the model, derived from both the respective websites and publicly available data. The study shows that ChatGPT is able to reason intelligently about soft aspects related to the investment prospects in the VC space, especially when given additional information. The model struggles to perform comparable numerical ratings of the companies, but by summarizing key company information, it can quickly perform an insightful qualitative investment report. The model could therefore save a lot of time for screeners, while considering a larger amount of variables, like sustainability, in an early stage.

To perform optimally, the model requires extra data manually scraped from the internet and although inputting the data into the model is faster than reading it, the process is still

time-consuming. Future iterations of the model should therefore be integrated into a larger software which scrapes the web for relevant company info, and automatically generates insightful reports on relevant startups. Thus, achieving an outbound VC screening of higher quality and greater quantity, that is more sophisticated in identifying the characteristics of a startup with the biggest potential for impact.

Although the current model has some weaknesses, scraping softwares along with rapid improvements of the technology, are likely to make LLMs an invaluable tool for VC investors in the foreseeable future. Allowing VCs to screen for the type of sustainable firms that fits into their specific strategy, and consequently help finance the impact stars of tomorrow.

This popular scientific article is derived from the master's thesis "How Venture Capital Could Use Large Language Models to Screen Sustainability Impact Startups" authored by Karl-Gustav Elf and Måns Tivenius (2023).