Skafos ML Engineer Test Project

At an AI tech startup, you are the lead machine learning engineer in charge of developing a recommendation system to meet the needs of an online retail customer (for example: https://www.wayfair.com/). You know that the retail customer wants to **increase user-engagement** on their site and **drive conversion (i.e. sales)** of their online product catalog. Given your experience in machine learning, you understand there are few ways to approach this kind of problem. However, **you haven't received any customer data yet.**

The delivered solution will end up in a real-time, interactive web component that our engineering team will embed on their eCommerce site.

Your Task

Time is tight; assume you have less than a day to prepare a *short* proposal (e.g. ~2 pages and don't spend more than 8 hours on this) for the team, in whatever format you choose, that outlines a technical solution for creating a recommendation engine to meet customer needs. For the solution, include a **small code prototype** paired with a **sample dataset** that you can demo to the team.

Consider the the following in your proposal:

- What sample data did you find/use/create?
- What machine learning algorithms did you use and why?
- Are there any trade offs to expect with this approach (inference speed, performance, etc)?
- How do you plan to validate that the models are "performing well enough" both at train time and once deployed in the wild?
- What are the deployment options for the solution (i.e. how will the engineering team be able to use them)?

Everything is up to YOU. Your choice of programming environment, modeling techniques, resources, and sample data. Just be sure to state any references / inspirations you use along the way.

Success Criteria

Points will be awarded for the breadth of the analysis (given time constraints), quality of the code, and the degree to which your proposal is clearly articulated and understandable by both a technical (engineer) and non-technical audience.

Remember, however, that this is intended to capture what you can do quickly, not given infinite time and resources.

Good luck and fire it up!