SENTIENT STUDY

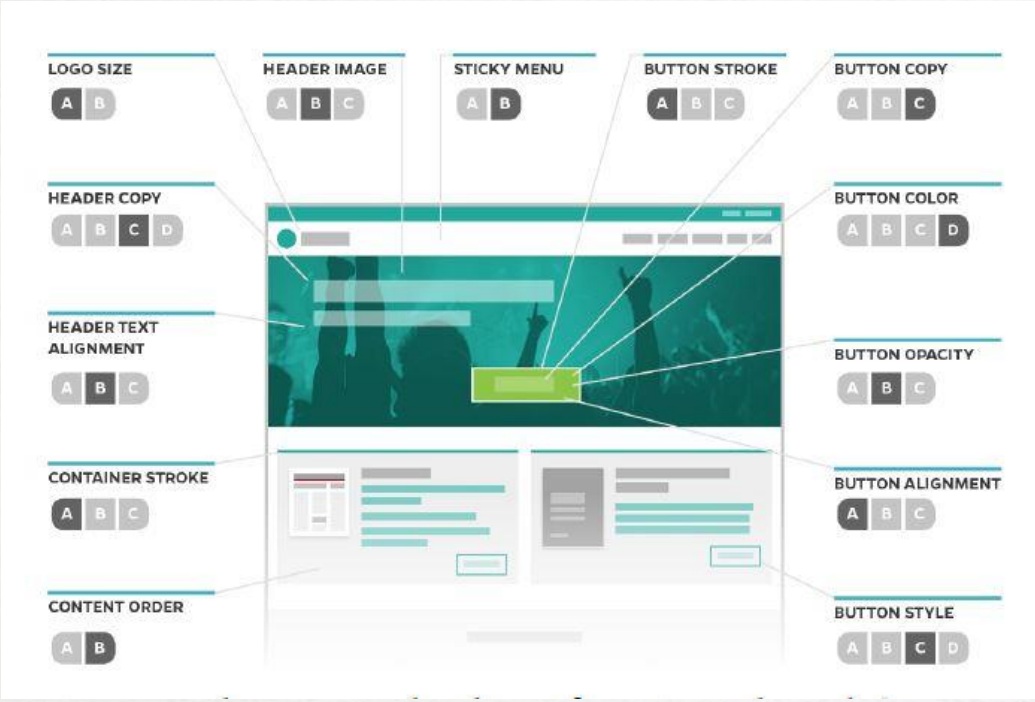
FEI WU

sentient ASCEND

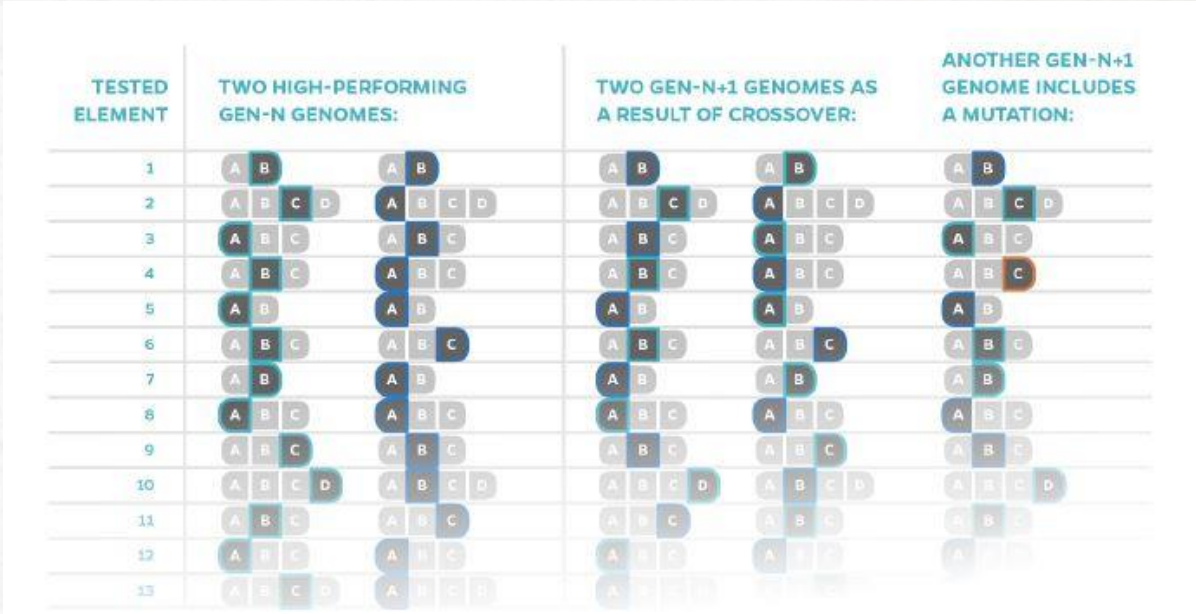
核心技术： Evolutionary Theory

CONVERSION RATE OPTIMIZATION THROUGH EVOLUTIONARY COMPUTATION

网页layout：和amazon MAB类似

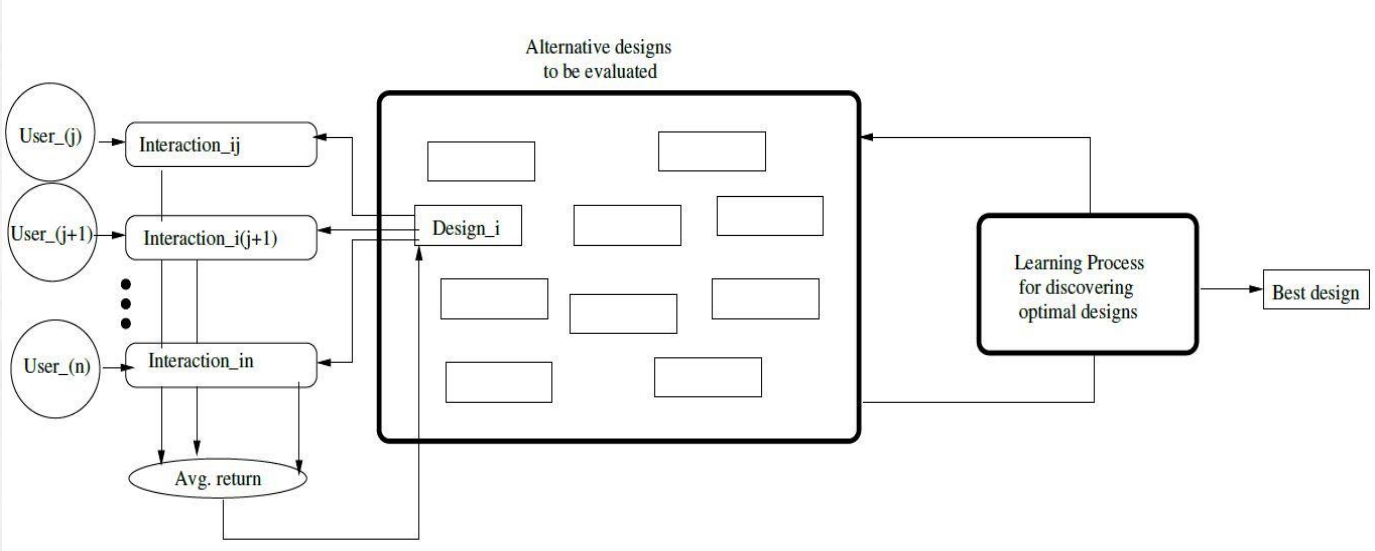


模型：将layout模拟成基因序列



CONVERSION RATE OPTIMIZATION THROUGH EVOLUTIONARY COMPUTATION（CONT'D）

训练流程图：



1. 使用control来初始化最初的实验组
2. 对实验组进行实验，按结果排序，保留top x percent的组，其余的丢弃
3. 对实验组基因（layout）进行进化，进化方法包括crossover 和 异变。
4. 重复二三

注：流程与A/B测试类似，且不含环境变量

sentient AWARE

VISUAL PRODUCT DISCOVERY

在用户面前展示一组产品，通过用户点击来更新展示的产品。

核心技术:

- Embedding training: 离线，在于用户交互之前已经训练好的模型，记录产品之间的相似度
- Product scoring: 在任意时间，系统给每个产品一个分数。分数大小代表其对用户的吸引值
- Screen selection: 根据Embedding training 和Product scoring 来决定展示给用户的产品。

DISCOVERING EVOLUTIONARY STEPPING STONES THROUGH BEHAVIOR DOMINATION

这篇文章研究在进化算法中（evolutionary algorithm）如何建立里程碑

新型搜索（novelty search）作为该篇文章的核心思路。

LATENT GEOMETRY AND MEMORIZATION IN GENERATIVE MODELS

It can be difficult to tell whether a trained **generative model** has learned to generate novel examples or has simply memorized a specific set of outputs. In published work, it is common to attempt to address this visually, for example by displaying a generated example and its nearest neighbor(s) in the training set (in, for example, the L 2 metric). As any generative model induces a probability density on its output domain, we propose studying this density directly. We first study the **geometry of the latent representation and generator**, relate this to the output density, and then develop techniques to compute and inspect the output density. As an application, we demonstrate that "memorization" tends to a density made of delta functions concentrated on the memorized examples. We note that without first understanding the geometry, the measurement would be essentially impossible to make.

EVOLVING DEEP NEURAL NETWORKS

这篇文章研究使用进化算法（evolutionary algorithm）来建立神经网络

其应用之一是在电子杂志上根据用户需求智能的截图

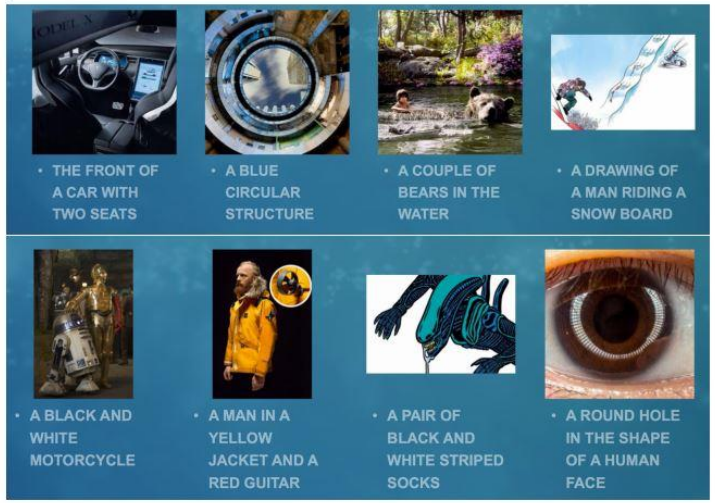


Figure 7: Top: Four good captions. The model is able to abstract about ambiguous images and even describe drawings, along with photos of objects in context. Bottom: Four bad captions. When it fails, the output of the model still contains some correct sense of the image.