

Proposal for AI content: TwoHandsBrands

Objective: Create content that is interesting to **entrepreneurs working in AI startups**. These articles should present a combination of information from both:

- Formal research from AI experts, including Berkley lecturers e.g. <https://www.youtube.com/watch?v=1sJuWg5dULg>
- Real world applications and commentary

This content should be related and presented in an engaging fashion that is still grounded in hard research.

Challenge: The material is very academic and doesn't actually relate to the 'real world' that much. If we make a metaphor to sports cars, the target audience cares about the finished product: the car – how fast it can go, how much it costs, and whether it can be used for racing. The lecturer is teaching his class about new advances in petrol manufacturing, which might be able to make cars go faster at some point. While this seems related, there's actually a really large gap between the maths behind AI and the applications of AI.

Proposed solution: Do two articles on each topic.

- 1. A more abstract and high level one, focused on the applications (eg "GPT-3 will allow teachers to easily generate homework assignments but also allow students to easily cheat on these assignments") with some relations to the research (e.g. "GPT-3 is an example of unsupervised learning which differs from supervised learning in x, y, z") and a link to article 2.
- 2. An article that is more technical, but still accessible focused more strongly on the content actually talked about in the lectures. (e.g. "GANs , by combining two concepts: generative networks and discriminative networks. Generative networks generate new content while discriminate contents are

classifiers: they sort data into the right classes”) with some references to the current applications and a link to article 1.

October: “AI in Education”

Article 1 outline: “How could AI change education?” (1500-2500 words)

Timeline:

- Research and drafting 1-5 October
- Feedback and revisions: 6-8 October
- Design and finalization: 6-13 October
- Publication: 15 October

Outline

- There is a broader debate about whether AI is overhyped or underhyped. Some people say that we’ve been promised self-driving cars and intelligent machines capable of communicating in the same way as humans for decades and we still don’t have them. Others think we’re just at the start of a hockey-stick growth in AI and that in the coming years AI will completely transform our world, our society, and many professions.
- Understanding supervised and unsupervised models from a high level perspective: with supervised models we already have many examples of the task we need the AI to complete. For example, if we want to auto-grade students essays and we already have a dataset of 10 years of students essays and their associated grades given by teachers, we can show this data to an algorithm and it can then guess the appropriate grades for new essays, which teachers have not yet graded. For unsupervised learning, we don’t have exact examples. We have example content and we want the AI to learn how to generalize this content

- [Example of face dataset from the video and thispersondoesnotexist.com reference]
- [Example of text generation from GP2 from the video with reference to Pieter]
- How this could change education:
 - Teachers can use generative models to generate homework assignments, exams, reports, and a lot more
 - But students can also use generative models to write these assignments. There are already ‘thesis mills’ where students can outsource their work cheaply, but soon this will be done on a new scale.
- Relate to arms race: both sides escalate tools.

Article 2 outline: “How do GANs work? (1500-2500 words)”

Timeline:

- Research and drafting 16-21 October
- Feedback and revisions: 22-23 October
- Design and finalization: 22-27 October
- Publication: 29 October

Outline

- “AI” is a fancy term that boils down to some fairly straightforward statistics
 - Supervised learning and unsupervised learning (summarize and link to discussion in article 1, but get into more technical details)
 - Generative and discriminative learning (compare and contrast with supervised vs unsupervised concepts)
 - GANs: how they work by combining generative and discriminative learning
- Relate GANs to density models
- “Theory often follows invention”: summarize this slide and discussion from the lecture and relate to GANs

- Conclude with fact that while people get very excited about new algorithms, in industry we often see new advances from people using more data, more compute power, and better engineering practices rather than new mathematical inventions.

Costs

- \$2000/article = \$4000 for October project
- Including writing, editing, proofreading, revisions
- Reduced to \$3000/month to continue similar schedule (2 articles/month) for at least 6 months, with credit applied for October work to reduce to the same.

