인공지능과 비즈니스

2020. 7. 11

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학기일정 (안)

W1 (7/4)	강좌소개 및 개요
W2 (7/11)	비즈니스 아이디어 구상과 발굴을 위한 문제 정리 및 분석
W3 (7/18)	사업 아이디어 타당성 검토 및 구체적 실행방안과 계획 수립
W4 (7/25)	User Feedback 분석 및 Prototyping 계획 수립
W5 (8/1)	프로젝트 중간발표

W6 ( )	시제품 제작 아이디어에 대한 피드백 및 수정
W7 ( )	Prototyping (시제품 제작 및 멘토링)
W8 (8/8)	Prototyping (시제품 제작 및 멘토링)
W9 ( )	시제품 제작 완료
W10 (8/22)	프로젝트 최종발표

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일주일동안 어떻게 지내셨나요

Practical Artificial Intelligence

An Enterprise Playbook

Alan Pelz-Sharpe & Kashyap Kompella

Deep Publishing

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Introduction

1. AI is Everywhere
2. Building an AI Strategy
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Final Thoughts

2. Building an AI Strategy

- Everyone is interested in AI, but each group is motivated differently:
    - Marketing department may want to tell the world that you are leveraging AI.
    - Product development team may be concerned that small startups might leapfrog them if they don't jump on the AI bandwagon quickly.
    - Engineering or IT department may be simply wanting to play with machine learning to build out their personal skill sets.

- Needs a solid understanding of what AI can and cannot do, ensuring everyone is on the same page.

- AI cannot do everything, and even some of the things it does, it does not do well.

- Conversely, when playing to its strengths, AI can work near-miracles.

- Fundamentally, AI identifies patterns; it searches data and arrives at decisions.

- It can be used to automate tasks and business processes.

- It can also augment existing processes and tasks, providing valuable insights and information.

- What AI cannot do by itself is to be creative, to empathize.

- It cannot create a strategy for you and cannot improvise on the fly.

- Let's think about these limitations a bit further, taking <u>empathy</u> as our example:

  - AI is being used extensively to automate call center work.
  - It can do that well, but AI cannot empathize.
  - It may be very efficient, but it's hardly likely to engage with or create any sense of relationship with the caller.
  - It's a tradeoff: faster call-taking and question-answering, potentially weaker customer relationships.

- You need to consider what AI/ML can really do well currently.

- For example, AI is good at narrow, focused tasks.

- AI performs poorly in broader situations, particularly those where there are many uniquely human capabilities.

- As a final point, consider why AI can automate even higher order knowledge workers like lawyers, traders, and radiologists, but struggles when it comes to roles like front office staff or salespeople.

- The fact is that the former, though highly educated workers, often perform the same functions and activities based on defined rules.

- In contrast, front office and sales workers require engagement, unscripted interactions, and relationship building.

Are you really being left behind in the AI race?

- All those people who say AI is already having an impact on their business and all those that think it will have a big impact soon?

- The reality is that most haven't done anything related to AI yet.

- Our research indicates that roughly a quarter of the organizations that have initiated AI projects, are only in the pilot stage.

- So, if you thought you were being left behind, you are probably not. You are probably with the majority.

Planning for Problems

- The most obvious barrier to adoption is attracting and developing the right AI talent:

    - It's in short supply, and worse, many people who claim to be AI experts are no such thing.
    - Need "Practical AI Experts". Not just computer science PhD.
        - Such practical AI experts are also in tremendous short supply.

- Security, regulatory compliance, privacy, and legal issues.

- Cultural resistance to AI within your organization.

- <u>Essential questions:</u>

    - What is the project? What value will it bring? What impact will it have?

    - What will the project involve in terms of changes to existing systems, processes, and the organization?

    - What financial benefits will the project bring?

Costs to Consider

- Staff Costs
  - Salaries for AI specialists can be higher than other IT roles.
  - Basic tasks like labeling of the training data can be a significant cost. 데이터 바우처 사업

- Data and computing environment costs
  - GPU, TPU — expensive!
  - AI project is going to be processing a lot of data, fast.
  - On premise servers? Or cloud services such as Amazon, Microsoft or Google?
  - Do a five-year cost analysis as low monthly fees can stack up versus high initial costs for on premise hardware.

Selecting AI Projects

- Data driven? Do you have access to the necessary data?

- Ask yourself whether AI is overkill.

- Don’t focus on the AI technology itself. Focus on the functionality it provides.

Which Use Cases?

- Common use cases: Learn from others, leverage best practices
    - Document automation, recommendation system, detection of fraud
    - Automation of customer interactions (call centers and field service)
    - Computer vision (engineering, manufacturing, healthcare, retail…)
    - Emotion detect
    - And others…

AI Roadmap

1. Define goals (metrics, KPI, etc.)

2. Define use cases (function, process, application, method)

3. Identify team needed

4. Identify the data required (source, platforms, products, tools)

Key Points from this Chapter

1. Start out small and focus your project on a short-term return on your investment. Be wary of overly ambitious projects. You must work in small, incremental steps.
2. Think of narrow applications and tasks where you can apply AI, and be sure that the business drives both the business plan and the use cases you select rather than IT.
3. Be sure to tightly define the problem you are trying to resolve and the scope of your AI project. Scope creep can sneak in very quickly in AI.

프로젝트 범위 (요건정의 쉽게 변하면 안된다)

4. Always make sure that you inventory the available data and identify the data gaps before moving ahead too quickly. If you don't have the data, you can't move ahead.
5. Even if you have the data, make doubly sure you do a human sense check of that data to make sure it's of sufficient relevance and quality for you to use.

6. If it is relevant and good data, consider what can realistically be learned from analyzing it. Again, what gaps or limitations might there be with the data?
7. You also need to do a reality check (many do not) and simply consider if this task is really learnable. 기계학습이 가능 한지
8. Don't underestimate how much data may be in employees' heads and experience. Without that, you may be going down a dead-end road. 사람의 경험을 무시하면 안된다
9. Assuming everything is looking good, consider how you will utilize the AI in your workflow. How will it integrate with real-world tasks and activities?
10. Finally, be sure to consider regulatory compliance impacts on your project.

Today's AI Artificial Intelligence

It's Not As Difficult As It Sounds!

By Maurice 'Big Mo', Chris & Killian Flynn

The FF Foundation is a not-for-profit,

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TodaysSimpleAIForAll.eventbrite.com - TodaysSimpleAI.com

Any profits from this book will go to charity.
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Images: Courtesy of Pixabay.com

Case Study: Retail & Online

Amazon[30] uses an AI engine to customize its recommendations, which customers receive both onsite while shopping and by email. It is a measure of the success of this system that 30%

Case Study: Retail & Online[31]

of Amazon sales now come through its recommendations – and this before Alexa starts bullying you into getting her the latest surround sound music system.

http://rejoiner.com/resources/amazon-recommendations-secret-selling-online/

Case Study: HR & Recruitment[42]

PWC, L'Oreal & Unilever all wanted to find new and better ways to help their teams recruit the best talent. An AI enhanced tool asked a series of questions to employees and

Case Study: HR & Recruitment[43]

candidates. By analysing profiles of successful employees they were able to create a success model for recruitment as well as quantify its effectiveness in supporting HR.

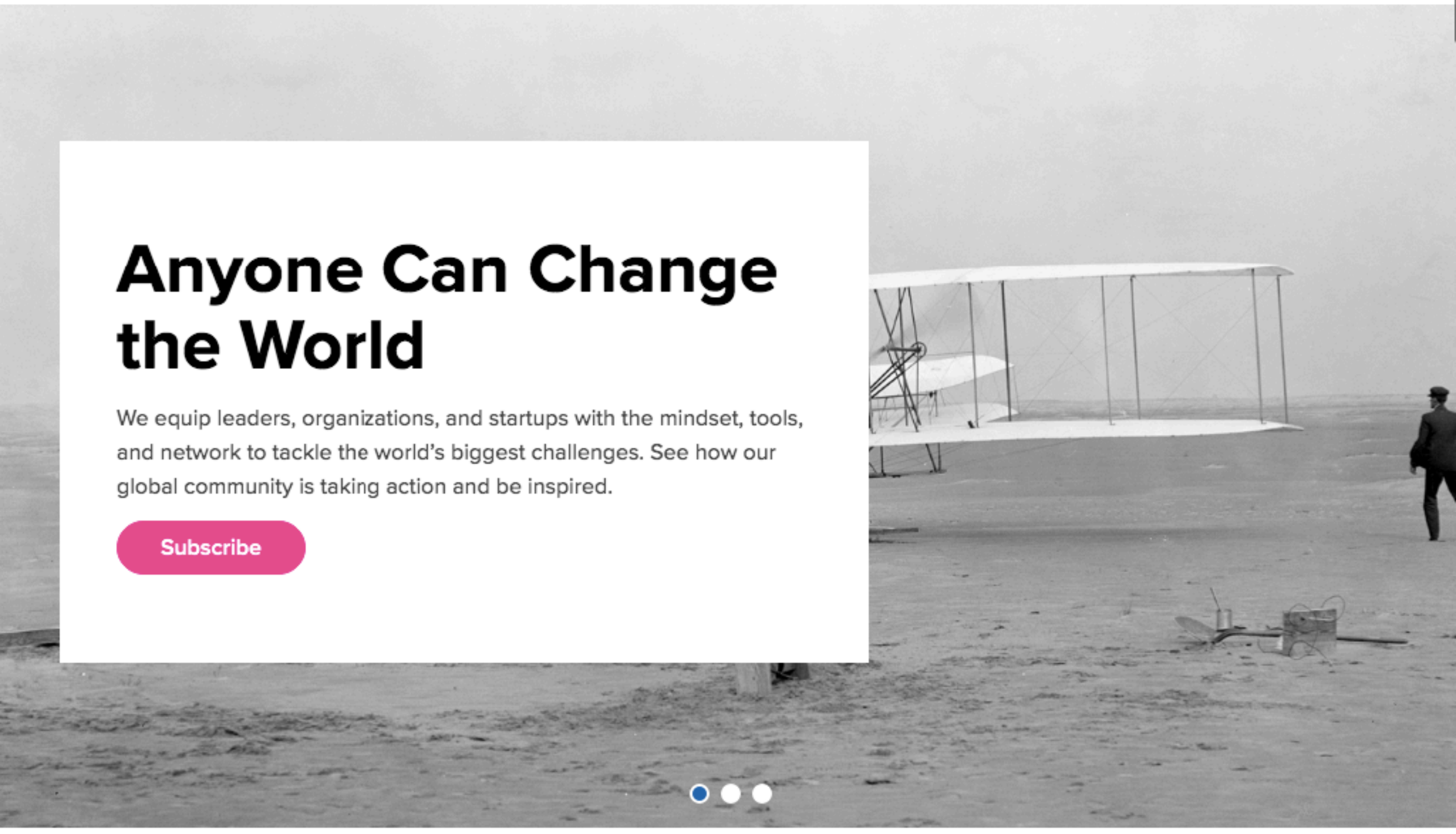
https://www.pwc.at/de/publikationen/verschiedenes/artificial-intelligence-in-hr-a-no-brainer.pdf

STEEP Workshop

Anyone Can Change the World

We equip leaders, organizations, and startups with the mindset, tools, and network to tackle the world's biggest challenges. See how our global community is taking action and be inspired.

Subscribe



Singularity

- A unique, distinct, or peculiar feature or thing.

부피은 영이고 질량은 무한데..블랙홀

- In theory, a point or region at the center of a black hole, where the force of gravity compresses an object such that it has infinite density and almost no volume.

- A hypothetical moment in time when technologies (such as artificial intelligence) have become so advanced that humanity undergoes a dramatic and irreversible change.

Exponential Technologies

- Technologies which are rapidly accelerating and shaping major industries and all aspects of our lives.

- Include artificial intelligence, augmented and virtual reality, data science, digital biology and biotech, medicine, nanotech and digital fabrication, networks and computing systems, robotics, and autonomous vehicles.

- When two or more of these technologies are used in combination to attack a persistent challenge, the possibility of developing a sustainable solution becomes much more likely.

Singularity University's STEEP Workshop

Which of these

societal,
technological,
environmental,
economic,
and political

predictions will be true in 15 years?

SOCIETAL

- Mars colonization
- Population is nomadic
- Billions of refugees due to climate change
- People have moved out of urban centers
- Majority of population in urban centers
- Free air travel
- People spend more time isolated
- People spend more time in social/public settings
- People spend the same amount of time working as today
- People spend less time working but enjoy a better quality of life
- People are jobless (due to AI and robots) and have a poorer quality of life
- All or almost all natural communicable diseases will be eradicated

TECHNOLOGICAL

- Telemedicine is common
- No desalination
- Water desalination successful
- Renewable energy is common
- Commercial space travel
- Commercial exo-suits available
- People spend most of their time in virtual worlds
- Augmented reality is everywhere
- Autonomous vehicles are everywhere
- Ai is a common tool

TECHNOLOGICAL

- Robots are commonly used in everyday life
- Wearable robots are common
- Desktop DNA printing will be commonly available
- Ubiquitous DNA scanning will be available in a variety of forms, cheap and accessible
- Brain-computer interface is the dominate method of human machine interface
- Wet augmentation (bio-implants, underskin implants) is common
- Full sensory, physical, and cognitive augmentation is used to amplify human performance
- Hackers are able to hack into human brains
- Flying cars are in use

ENVIRONMENTAL

- Drinkable water is abundant
- Drinkable water is scarce
- Minor climate change
- Major climate change
- Formerly desert areas are now fertile
- Overabundance of human waste
- Coal enters permanent decline
- Oil enters permanent decline

ENVIRONMENTAL

- Ultra cheap, efficient batteries
- Energy is abundant
- Energy is scarce
- Africa has been ag-industrialized
- Europe and US outsource food production
- Cellular agriculture is common place
- Microbiomes change farming
- Large scale mining operations in space

ECONOMIC

- One universal global currency
- Car ownership is novelty
- Sharing economy prevails
- Affordable healthcare for all
- Free education for all thanks to AR/VR
- Increased disparity between rich and poor
- Decreased disparity between rich and poor
- Insurance industry implodes
- Gold standard returns
- Most people derive basic income from blockchain/crypto “mining” activity
- Fortune 500 are all decentralized autonomous organizations (DAOs)
- Largest cyber-bank heist has already occurred.

POLITICAL

- Nations are mostly the same as today
- Ideologies, rather than geographic countries
- Nations divide into city-states and transnational corporate sovereignties
- Mostly peaceful but with small civil wars
- War due to climate change
- “Developing world” is now the center of business and innovation
- “The West” continues to dominate financially
- Voting and governance for democratic institutions move to the blockchain

Project Activity

- Brainstorming -

공지사항

- 다음주 (7/18)
  - 특강 및 멘토링: Naver Clova 강택영 팀장