AI For the Better

Extra Power after releasing GPT & LLM technology

2023 // Pune Tech Community (Virtual) // Dennie Declercq

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Intro

Accessibility & Disabilities

Azure Open AI

Azure AI + Machine Learning

General Purpose Tech

Solving Daily Difficulties

Let's HACK for The Better!

Outro

About Me

- Dennie Declercq
- President/ Developer DDSoft
- Microsoft MVP
- @DennieDeclercq
- #DreamingIsBelieving
- https://ware.ddsoft.be

Accessibility & Disabilities

The Disability Spectrum

- Touch
  - One arm
  - Arm injury (T)
  - New parent (S)
- See
  - Blind
  - Low vision
  - Being distracted (T)
- Hear
  - Deaf
  - Hard of hearing
  - Ear infection (T)
- Speak
  - Non-verbal
  - Heavy accent
  - Mouth infection (T)
- Cognition
  - Learning disability
  - Down syndrome
  - Memory difficulties (S & T)
- Mental Health
  - Neurodiversity
  - Anxiety & Stress (S &T, or permanent)
  - Depression & Burnout (S or T)

T = Temporally
S = Situational

Learning Disability

Intellectual Functioning

Also called intelligence

Mental capacity

IQ age between 2 -8yo

Adaptive Behavior

Conceptual Skills

- Language/literacy
- Money
- Time/numbers

Social Skills

- Social responsibility
- Self-esteem

Practical skills

- Activities daily living
- Personal care / healthcare

Mental Health*

*= This list is not complete; Only meant as introduction in this topic.

- Stress, Anxiety, Depression, Burn-out
- Need for confirmations
- Need for motivation
- Exhaustion

Neurodiversity*

*= This list is not complete; Only meant as introduction in this topic.

- Autism
  - Structure
  - Confirmation
  - Slower stimuli-brain-response time
- Dyslexia
  - Difficulties writing, grammar & spelling
  - != less intellectual Capacity
- Dyscalculia
  - Difficulties with numbers
- AD(H)D
  - Motivation, concentration, structure and impulse-control

Azure Open AI

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Introduction

- Microsoft's Open AI solution for developers
- Create resource, Then go to specific portal
- Playgrounds, finetuning, training and integration own data
- Export (finetuned) model as (REST) Api
- Use in own products

Chat

- Equivalent to Chat GPT interfaces
- Bot interfaces
- Available Models to Deploy (SEPT 2023)
  - GPT-35 (3,5)-Turbo
  - GPT-35(3,5)-Turbo-16K

Tell me something about Asia that you think is unique and special.

Asia is a continent of diversity. It is a melting pot of cultures, religions, and traditions. It is home to some of the world's most ancient civilizations, and it is also the birthplace of many of the world's major religions. Asia is a continent of contrasts, where you can find everything from bustling cities to remote villages, from modern skyscrapers to ancient temples. It is a continent that is constantly evolving and changing, yet it still manages

List me 3 important buildings in Asia and why they are important.

The Great Wall of China – The Great Wall of China is one of the most iconic structures in the world. It is a series of walls and fortifications that were built over 2,000 years ago to protect China from invaders. The wall stretches over 13,000 miles and is one of the largest construction projects in history.

The Taj Mahal – The Taj Mahal is a mausoleum located in Agra, India. It was built
And the 3d one..?

Angkor Wat – Angkor Wat is a temple complex located in Cambodia. It was built in the 12th century and is one of the largest religious monuments in the world. It was originally built as a Hindu temple, but later became a Buddhist temple. It is a UNESCO World Heritage Site and is considered one of the most important archaeological sites in Southeast Asia. The temple is known for its intricate carvings and stunning architecture. It is a symbol of Cambodia's rich cultural heritage and is

Completions

- Equivalent to GPT
- Generate texts to produce
  - Articles, E-mails, Blogs, Poem
- Generate Lists
  - Ideas, names, tools,…
- Explain stuff
  - Code, Science, Behavior,...

DALL-E

- Generate images based on prompts
- Finetune prompts & settings
- Export generations

PROMPT: Generate me a view of looking through a windows and seeing a theme park and a lake

Playground

- Play with the models
- Finetune the models
- Configurations

Management

- Create deployments
- Create Models
- Add custom Data
- Configure Content Filters
- Configure Quotas

DEMO: Azure Open AI

Azure AI + Machine Learning

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Speech

- Text-To-Speech
- Custom Voice
- Voice Assistants

- Read aloud for people
- People with learning disabilities
- Dyslexia
- Give confirmations for anxiety

General Purpose Tech

OpenAI: Chat GPT

- Asking questions to a bot
- Give answers in 'human sentences'
- Uses context (few shot prompting)

! Cut-off the internet September 2021 !

Use cases FOR THE BETTER:

✓ Limit executive workload (Autism, ADHD,..)

✓ Write with good spelling (Dyslexia)

✓ Give Ideas

Bing Chat GPT

- GPT style of working
- Recent data
- Ask questions and get reasoning
- Shows resources

Use cases FOR THE BETTER:

✓ Limit executive workload (Autism, ADHD,..)

✓ Write with good spelling (Dyslexia)

✓ Give Ideas

GitHub CoPilot

- Code assistant
- Translate programming languages
- Write boiler code

Use cases FOR THE BETTER:

✓ Concepts with structure (Autism/ADHD)

✓ Reducing boring parts (Autism/ADHD)

✓ Help with new concepts (Autism/ADHD)

C# program.cs JS QuickSort.js

JS > JS QuickSort.js > quickSort

```javascript
// write a quicksort algorithm
// 1. pick a pivot
// 2. partition the array into two halves, one with
// 3. recursively call quicksort on the two halves
// 4. return the sorted array

// Write in JS  (use recursion)

function quickSort(arr) {
    if (arr.length <= 1) {
        return arr;
    }
    let pivot = arr.shift();
    let left = arr.filter(el => el < pivot);
    let right = arr.filter(el => el >= pivot);
    let leftSorted = quickSort(left);
    let rightSorted = quickSort(right);
    return [...leftSorted, pivot, ...rightSorted];
}
```

Microsoft Designer

- Make flyers and designs
- Make cards, leaflets,...

Use cases FOR THE BETTER:

✓ People with fantasy but without designer skills
✓ Entrepreneurs
✓ Solo developers
✓ (ex: on the Neuro Diversity Spectrum)

PROMPT: Make a flyer for a .NET community event about accessibility on September the 20th. The main speaker will be Dennie Declercq

DEMO's : General Purpose Tech

Solving Daily Difficulties

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Literacy

- Difficulties with reading
- How do we translate governmental information?
- How do we provide information from shops/ leisure?
- Can we help with accessible communication?

Money

- How do we make digital money tangible?
- The pro's vs the con's of cashless
  - Pro
    - Sustainability
    - Limits diseases & infection
  - Con
    - Not tangible
    - Difficult concepts to learn
    - What about gifts from friends/ grandparents
    - What about a blocked bank account?

Daily Living

- Can we assist people with making daily choices?
- Can we help with purchases in the grocery store?
- Can we make temperature & humidity tangible?

Feelings & Emotions

- Can we train emotions?
- Can we describe emotions?
- What about a ‘negative mood’ alarm?
- Can we pop-in happy news on bad days?

Dependency

- Can we limit external dependency?
- Can we help to train people theirself?
- What about over protecting parents?
- Are there taboos?

Let's HACK for The Better

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Deepfakes* For The Better

- Deepfakes have a negative reputation
- Although the Deepfake technology can be used for THE BETTER
- Let's talk about Deepfakes in combination with
  - Rehabilitation
  - Motivation
  - Therapy
- *With or without VR

Deepfakes & Rehabilitation

- Seeing yourself moving around (F)
- Seeing yourself in a car (P)
- Seeing yourself performing a job (P / F)

F = Physical

P = Psychological

Deepfakes & Motivation

- Images of you in the house you want to live
- Images of you as a public speaker
- Newsflash of you reaching a goal

Deepfakes & Therapy

- Trauma Exposure Therapy
- Personal Growth
- Behavior training

CoPilots for The Better

- CoPilots are a productivity tool
- But the concept of Co-Pilots can also be used for personal and work life of:
  - People on the autism spectrum
  - People with Dyslexia
  - People with Learning Disabilities

CoPilots & Autism

- Repetitive tasks
- Assistance with Planning & Administration
- Assistance with groceries shopping
- Assistance planning public transport

CoPilots & Dyslexia

- Helping with writing
- Assisting with summarizing
- Assisting with planning

CoPilots & Learning Disabilities

- Exercising money concept
- Assisting household- jobs
- Assist in transport
- Safeguard

Chat Assistants for The Better

- Remember 2021 – 2022
  - I was ranting about Chatbots
- Look what a magic we have in our hands
- Let's use it FOR THE BETTER
- We are not there yet
- But we can start configure and finetune!

Chat Assistants & Autism

- Explaining scenario's multiple times
- Further reasoning than most folks do
- Confirming concepts multiple times

Chat Assistants & Mental Health

- Giving confirmations
- Someone with interest
- Therapy for those who cannot go to a psychotherapist*

*= Yes.. I know this is taboo!

Chat Assistants & Learning Disabilities

- Explaining societal concepts in other jargon
  - "Explain to a kid"
- Rehearse words & Jargon
- Train historic information

Recap

Resources

- Recording AI for The Better (original): https://go.ddsoft.be/ai4thebetter
- Slides AI for the Better (Original):
- https://go.ddsoft.be/AI4TheBetterSlides
- Slides AI for the Better: Extra Power after releasing GPT & LLM Technologies
- https://go.ddsoft.be/ai4thebetterGPT
- https://ware.ddsoft.be

Thanks || Q&A

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