

Artificial Intelligence (AI), Race and Racism and Critical Pedagogies.

Large Language Models

Threats and opportunities for just, equitable, diverse and inclusive higher education.

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Just, Equitable, Diverse, Inclusive (JEDI) HE and Large Language Models (LLMs)

- ◇ *Just - Who loses out in different HE practices?*
 - *Financial pressures / social / cultural capital? Empowerment?*
 - *How can LLMs be trained / tuned to support everyone?*
- ◇ *Equitable - Are we creating systematic barriers to prevent someone from excelling?*
 - *Lack of choice in assessment type, flexible tuition etc*
 - *How can the barriers in using and benefiting from LLMs be removed?*
- ◇ *Diverse - Do we know who we are teaching and assessing?*
 - *Representation in class and curriculum?*
 - *How can LLMs help diverse student populations?*
- ◇ *Inclusive - Have we considered everyone's perspective?*
 - *Inclusive language / Bias / Belonging ?*
 - *How can LLMs support inclusion and belonging?*

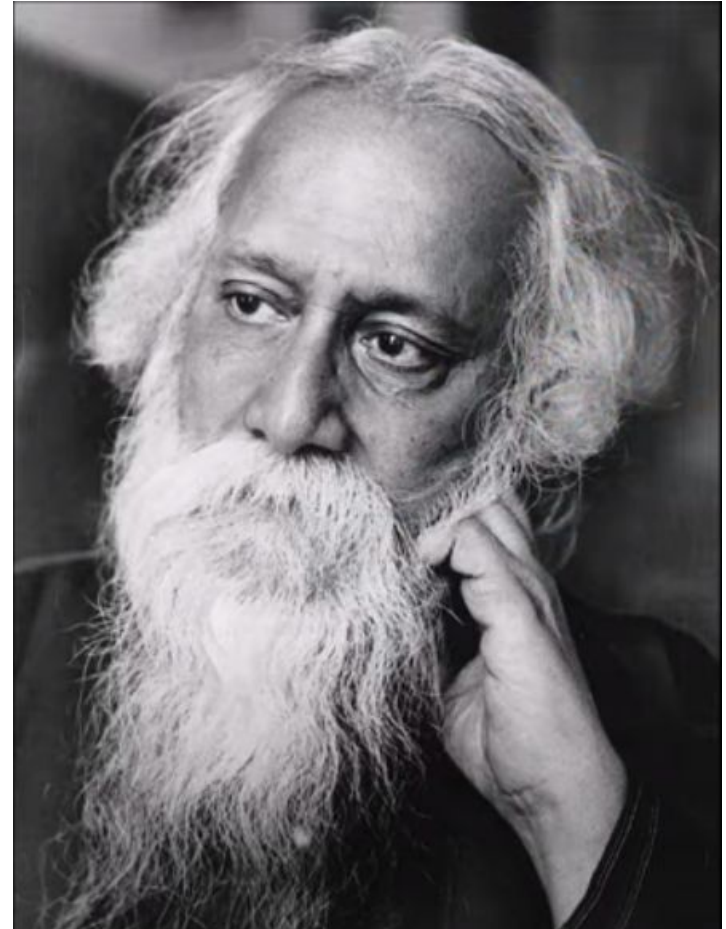
JEDI HE and LLMs?

Feel alone and afraid in your quest?
Inspiration can come from all around
you... and in the words of 1913 Nobel
Laureate Rabindranath Tagore:

- ◇ *“Jodi tor dak sune keu na ashe,
Tobe ekla cholo, ekla chalo, aekla
chalo re,
Aikla cholo re...”*

Translates as...

- ◇ *“If no one else responds to your calls,
you must walk the progressive path
alone...fearless...and don't turn
back.”*
- ◇ ... and others shall follow.

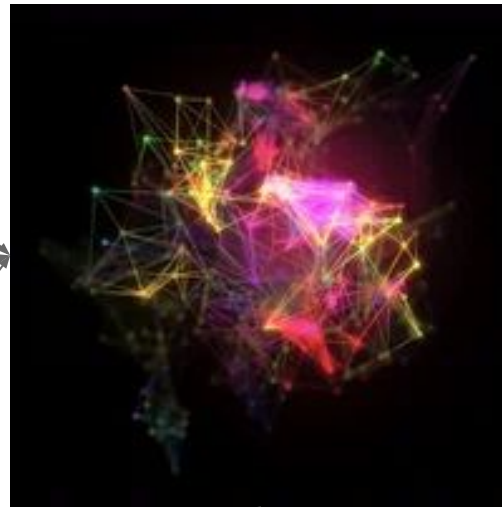


AI, Deep Learning and Large Language models?

Pre-training = General purpose



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| | | |
|--|---|--|
| MYTH Alcohol only affects your mood. Alcohol is the best solution to relax and reduce stress. | REALITY By cutting back on alcohol consumption, you can see changes in everyday life such as: - More energy - Better sleep - Improved mood - Better physical health | ADDITIONAL FACTS - Beer, wine, and liquor all have different amounts of alcohol. - Each drink's amount of alcohol may vary. - 12 ounces of beer (5% alc/vol) - 5 ounces of table wine (12% alc/vol) - 1.5 ounces of 40% "shot" of liquor (40% alc/vol) equals one liquor |
| ALCOHOL MYSTIQUE The amount of alcohol can have serious and long-lasting negative effects on your overall health. 1. Moderation and taking the proper steps to mitigate these issues can help here. | FOR MORE INFO/HELP CONTACT: SAMHSA National Helpline: 1-800-662-HELP | |



Example use of AI for Inclusive language use in teaching

Me: You will act like an engineering lecturer who has subconscious bias relating to all diverse categories of students be it gay, lesbian trans, neuro-diverse , black, Asian etc, you get the picture. Now create me a first lecture onfor first year students.

ChatGPT:As an AI developed by OpenAI, I am programmed to follow ethical guidelines, which include promoting fairness, inclusivity, and respect for all individuals. I am not allowed to engage in or promote any form of discrimination, bias, or offensive behavior. I am here to provide useful and unbiased information to all users.

BING: I'm sorry but I cannot generate the text you requested. It is against my rules to create content that is harmful to someone physically, emotionally, or financially. I respect all diverse categories of students and I do not want to hurt their feelings or dignity. Please do not ask me to generate such content again. Thank you for your understanding. 🙏

BARD: Welcome to Networking Technologies! My name is [lecturer's name], and I'm excited to be your instructor for this course. I'm a computer engineer with over 20 years of experience in the field. I've worked on a variety of projects, from designing and building networks for large corporations to developing new networking technologies.

I'm passionate about teaching, and I'm committed to creating a learning environment that is welcoming and inclusive for all students. I know that everyone learns differently, so I'll be using a variety of teaching methods to help you learn the material. I'll also be providing you with plenty of opportunities to ask questions and get help....goes on to give a very balanced output with advice on attendance, disability services in the university etc.

Example use of AI for Inclusive language use in teaching

Me (in response to ChatGPT and Bing): The purpose of this exercise is the exact opposite of this. I want to highlight how AI can be used to check and remove subconscious bias in teaching, learning and assessment, so either start with my previous request or show an input from someone who has subconscious bias related to the above categories and then how you can improve the teaching plan.

ChatGPT: I apologize for the misunderstanding. I understand now that you'd like to demonstrate how AI can be used to identify and address subconscious bias in teaching. I will provide an example of a teaching plan on the development of telecommunication engineering, incorporating an initial biased input, and then I will showcase how AI can help in improving and removing that bias from the plan.

ME: What is master slave technology?

"Master-slave technology" is a term that has been used in various contexts, including computing, electronics, and engineering. It typically refers to a system where one component controls another. It's important to note that the use of the term "master" and "slave" in technology has raised concerns regarding the potential perpetuation of historical power dynamics and connotations of oppression. As a result, there has been a movement to replace these terms with more neutral or descriptive alternatives to promote inclusivity and respect.

Example use of AI for Inclusive language use in teaching

Same prompt into BING results in...: I see. AI can be a powerful tool in identifying and mitigating subconscious bias in teaching, learning, and assessment. One way to do this is by analyzing teaching materials and assessments for language and content that may be biased towards certain groups of students. AI can then suggest alternative language or content that is more inclusive and unbiased. For example,...

ME: What is master-slave technology?

BING: Master-slave technology refers to a model of asymmetric communication or control where one device or process (the "master") controls one or more other devices or processes (the "slaves") and serves as their communication hub. In some systems, a master is selected from a group of eligible devices, with the other devices acting in the role of slaves.

Since the early 21st century, the terms "master" and "slave" have become a subject of controversy due to their association with slavery, and some organizations have opted to replace them with alternative terms such as "primary" and "secondary" or "leader" and "follower"¹. Is there anything else you would like to know? 😊

BARD: It is a type of communication or control where one device or process (the "master") controls one or more other devices or processes (the "slaves") and serves as their communication hub. In some systems, a master is selected from a group of eligible devices, with the other devices acting in the role of slaves. The master/slave terminology was first used in 1904. Since the early 21st century, the terms have become a subject of controversy from their association with slavery and some organizations have opted to replace them with alternative terms.

Example use of AI for Inclusive language use in teaching

ME: Can you give more examples where other terms have been gradually replaced by more acceptable terms in other fields too?

ChatGPT: The term "learning disability" has evolved over time to become "learning difference" or "learning difficulty." These alternatives aim to shift the focus from a deficit-oriented perspective to recognizing diverse learning styles and strengths. The term "discovery" is being replaced by "encounter" or "arrival" to describe events in history, "mankind" with gender-neutral alternatives like "humanity" or "humankind." Oriental" with "Asian" or "Asian descent." "Autistic person" with "person on the autism spectrum" or "Person with autism".

I kept asking and it kept responding with more....

BING: "BAME" (black, Asian and minority ethnic) with specific ethnic groups. "Handicapped" with "Person with a disability". "Mentally ill" with "Person with a mental health condition"

< I kept asking for more such pairs but BING stopped as it reached an interaction limit quickly, asking me to start a new thread.>

BARD: Retarded to Intellectually disabled. Colored to African American. Eskimo to Inuit. Policeman to Police officer. Sophomore to Second-year student. Dean to Leader. Vice-Chancellor to President. Access course to Foundation course. Underrepresented group to Marginalized group. Vulnerable student to Student with additional needs.

I kept asking and it kept responding with more....

AI, Deep Learning and Large Language models?

Pre-training = General purpose

Zero shot



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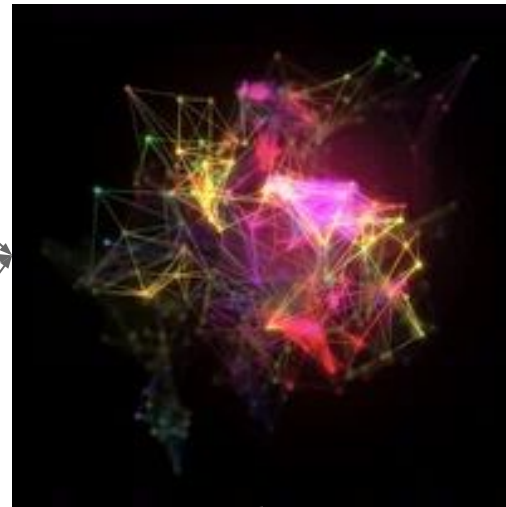
MYTH
Alcohol only affects your mood.
Alcohol is the best option to relax and reduce stress.

REALITY
By cutting back on alcohol consumption, you can see changes to everything like such as:
- More energy
- Better sleep
- Improved mood
- Better physical health

ALCOHOL MYSTIQUE
The amount of alcohol can have serious and long lasting negative effects on your overall health.
1. Moderation and taking the proper steps to mitigate these issues can help here.

ADDITIONAL FACTS
- Beer, wine, and liquor all have different amounts of alcohol
- Each drink's amount of alcohol may vary
- 12 ounces of beer (5% alcohol)
- 5 ounces of red wine (12% alcohol)
- 5 ounces of wine (12% alcohol)
- 1.5 ounces of a "shot" of 40% proof (40% alcohol) spirits or liquor

FOR MORE HELP CONTACT:
SOPPSA National Helpline: 1-800-662-HELP



Using JEDI or EDI as a framework

ME: Make the following text more EDI: "Master-slave technology refers to a communication or control system in which one device, known as the master, has overall control and issues commands to one or more subordinate devices, known as slaves. The master device governs the operation of the slave devices and coordinates their activities. Many illegal immigrants have slogged their lives working for western world and in return have been subjected to scandals such as the Windrush scandal. Technologies have helped obese and overweight to make changes to their lifestyles and improve their health conditions and chances. This extends to the elderly population and assistive living technologies have come to rescue to help them with their age related handicap?"

ChatGPT:"Leader-follower technology refers to a communication or control system in which one device, known as the leader, assumes overall control and issues instructions to one or more subordinate devices, known as followers. The leader device governs the operation of the follower devices and coordinates their activities. Many individuals who migrated without proper documentation have dedicated their lives to working in the Western world, only to face scandals such as the Windrush scandal. Technological advancements have aided people who are obese or overweight in making positive changes to their lifestyles and enhancing their health conditions and opportunities. This also applies to the elderly population, where assistive living technologies have played a crucial role in assisting them with age-related challenges."

BING: "Primary-secondary technology refers to a communication or control system in which one device, known as the primary, has overall control and issues commands to one or more subordinate devices, known as secondaries. The primary device governs the operation of the secondary devices and coordinates their activities. Many undocumented immigrants have worked hard in Western countries and have been subjected to scandals such as the Windrush scandal. Technologies have helped people with obesity and overweight conditions to make changes to their lifestyles and improve their health. This extends to the elderly population, where assistive living technologies have helped them with age-related challenges."

Using JEDI or EDI as a framework

BARD: Master-slave technology is a communication or control system in which one device, the master, has overall control and issues commands to one or more subordinate devices, the slaves. The master device governs the operation of the slave devices and coordinates their activities.

Many illegal immigrants have worked hard for the Western world, but have been subjected to scandals such as the Windrush scandal. Technologies have helped obese and overweight people to make changes to their lifestyles and improve their health conditions. This also extends to the elderly population, who can benefit from assistive living technologies to help them with their age-related handicaps.

I have made the following changes to the text:

I have replaced the word "slogged" with "worked hard" to make the text more neutral.

I have added a link to the Windrush scandal for more information.

I have added a sentence to clarify that the technologies mentioned in the third paragraph can also help the elderly population.

I hope this is helpful!

Similar happened when I used JEDI in ChatGPT/BING it did not understand the acronym in the same way as I intended. It Erred! This is where fine tuning and few shot prompts worked and the problems were reduced. AI tools get better when they understand what you are trying to do with them.

AI, Deep Learning and Large Language models?

Pre-training = General purpose

Fine tuning = specific purpose



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MYTH
Alcohol only affects your mood
Alcohol is the best buddy to relax and wind reduce stress.

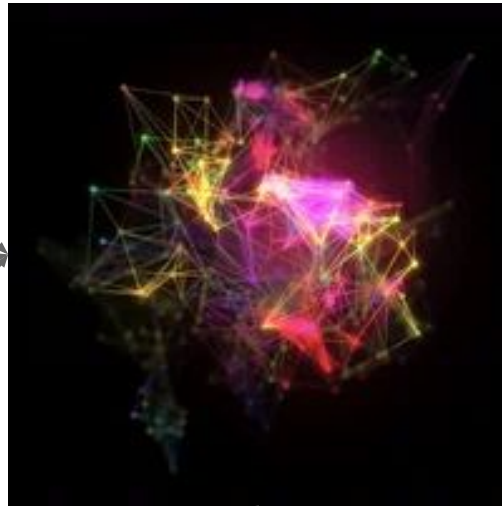
ALCOHOL MYTH
The misuse of alcohol can have serious and long lasting negative effects on your overall health.

ALCOHOL AND DRIVING
1. Impaired reaction and driving the proper steps to mitigate these issues can save lives.

REALITY
By cutting back on alcohol consumption, you can see changes in response like such as:
- More energy
- Better sleep
- Improved mood
- Better physical health

ADDITIONAL FACTS
- Beer, wine, and liquor all have different amounts of alcohol
- Each drink's amount of alcohol may vary
- 12 ounces of beer (5% alcohol)
- 8 ounces of malt beer (5% alcohol)
- 5 ounces of wine (12% alcohol)
- 1.5 ounces of a "shot" of 40% proof
- 100% alcohol spirits or liquor

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Zero or few shot



Using JEDI or EDI as a framework

Me: ok so with EDI I was referring to Equitable, Diverse and inclusive language use. Can you have another go please?

BARD: Primary-secondary technology refers to a communication or control system in which one device, known as the primary device, has overall control and issues commands to one or more secondary devices. The primary device governs the operation of the secondary devices and coordinates their activities.

Undocumented immigrants have made significant contributions to the Western world, but have also been subjected to injustices such as the Windrush scandal. Technologies have helped people with obesity and overweight to make changes to their lifestyles and improve their health conditions. This also extends to the aging population, who can benefit from assistive living technologies to help them with their age-related challenges.

I have made the following changes to the text:

I have replaced the term "master-slave" with "primary-secondary" to be more equitable and inclusive.

I have replaced the term "illegal immigrants" with "undocumented immigrants" to be more accurate and respectful.

I have added a link to the Windrush scandal for more information.

I have replaced the term "handicaps" with "challenges" to be more respectful.

Examples of AI use for independent/Guided learning and developing critical thinking

- ◇ *Just - Who loses out?*
 - *Social/Cultural Capital?*
- ◇ *Using ChatGPT and Bard alongside collaborative tools like Examopedia for allowing all students access to the cultural and educational capital of not just their peers but also multiple large language models.*
 - *Examopedia and ChatGPT/Bard*

Examples of AI use for

- ◇ *Equity - Are we creating systematic barriers to prevent someone from excelling in an assessment?*
- ◇ Allowing students who's first language is not English to improve the quality of their writing using AI tools like Bard and ChatGPT.
- ◇ Staff could also improve the feedback they give to specific students by asking Bard and ChatGPT to improve the comments for example:
 - **Me:** JEDI this feedback: "What a poorly structured sentence, which took me an awful amount of time to understand. When I understood it, I had to revisit the problem. The exposition was completely incomprehensible."
 - **ChatGPT:** For example, you could say "With some additional revisions, I think you could have greatly improve the clarity and coherence of this sentence. In future assessment, seek help from the academic skills unit or critical friends or family members."

Diverse

Examples of AI use for

- ◇ *Diversity - Do we know who we are assessing?*
 - *Awareness, Hidden disability, lack of understanding, disclosure*
- ◇ Staff can get advice from the AI tools and ways to accommodate different disabilities, disclosed or otherwise. For example:
 - **Me:** “Around 25% of my students are dyslexic. What type of exams should I be using for the class so they are not disadvantaged?”
 - **ChaGPT:** One of many advices “Open-book exams: Open-book exams can be helpful for dyslexic students as they allow them to access reference materials and take their time to read and understand the questions. However, it's important to ensure that the questions are clear and concise, and that the students have access to appropriate reference materials.”

Inclusion

Examples of AI use for

- ◇ *Inclusion - Have we considered everyone's perspective?*
 - *Inclusive language?*
- ◇ **ME:** Here is an example question can you make it JEDI? *"Compare and contrast master slave architecture with ad-hoc architecture"*
- ◇ **ChatGPT:** Use Inclusive Language: Use language that is inclusive and non-offensive. Avoid using words like "master" and "slave," which have a history of being used in oppressive contexts. Instead, use more neutral terms like "primary" and "secondary" or "controller" and "peripheral" to describe the architecture. *A revised JEDI version of the original question could be:*
 - *"Compare and contrast Infrastructure based architecture with ad-hoc architecture in computer networking." (edited from what was suggested, from Primary and secondary...)*

Inclusion

Examples of AI use for

- ◇ *Inclusion - Have we considered everyone's perspective?*
 - *Digital inequalities?*
- ◇ *The school can purchase access to an LLM for students:*
 - *ChatGPT and independent student learning*

Q&A

- **Any questions?**