

# Threats to Engineering Teaching Integrity in a Hyper-Connected World

Dr Thomas Lancaster - Imperial College London, UK

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**NORDTEK**

**Imperial College  
London**



# Dr Thomas Lancaster

<http://www.thomaslancaster.co.uk>

Computer Scientist  
Senior Teaching Fellow  
*Academic integrity* researcher



@DrLancaster  
#contractcheating



# Dr Thomas Lancaster

<http://www.thomaslancaster.co.uk>

Computer Scientist  
Senior Teaching Fellow

(more often an *academic misconduct*  
researcher)



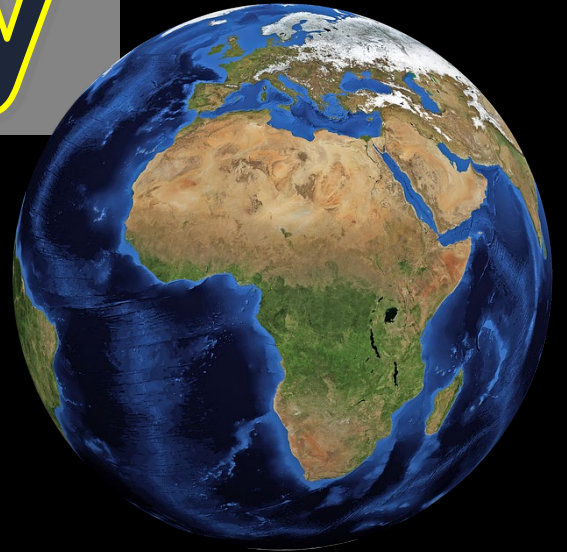
@DrLancaster  
#contractcheating

# To Be Considered...

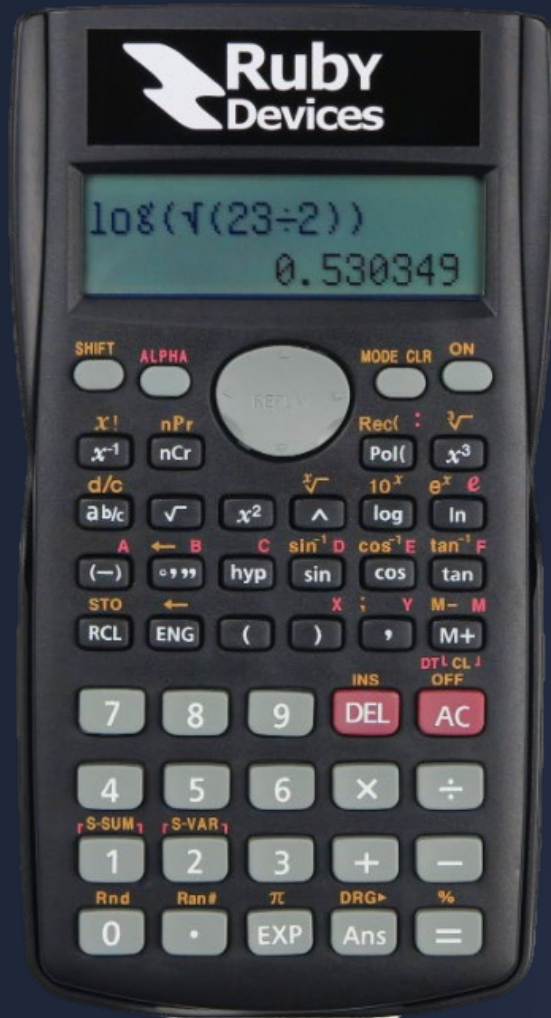
What are the **current threats** to academic integrity that we should be aware of within engineering education?

How should we address these threats?

# A World of Technology







A useful  
tool?



With some  
extra  
features to  
*help* during  
exams



Rudi Podgornik 岳儒迪  
@rpodgornik

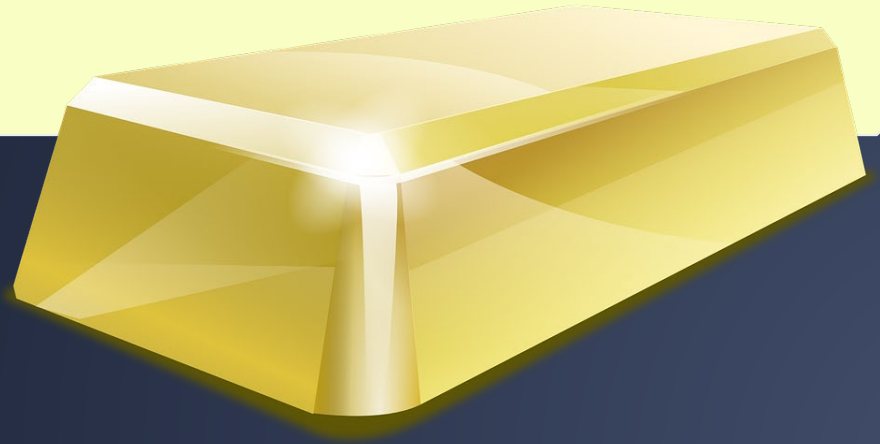
A "cheating vest" from the confucian state exams a thousand years ago in Dingzhou. Some things never change.

Cheating is  
not new,  
but threats  
continue to  
emerge



# Business is Booming!

Exam and assignment cheating is **massive business** in the hyper-connected world



**What  
Threats Are  
Out There?**



# The Biggest Threat? Contract Cheating

A student uses a third party to produce their assessed work for them



**Ninja Essays**  
Reviews 46 • Excellent

4.6 ⓘ

The image shows a Trustpilot profile for "Ninja Essays". On the left is a cartoon illustration of a black ninja with a yellow sash, holding a scroll and a rolled-up document. To the right of the illustration, the business name "Ninja Essays" is displayed in bold black text. Below the name, it says "Reviews 46 • Excellent". Underneath that is a star rating system with five green stars, the first four of which are filled, and a grey star to the right. To the right of the stars is the rating "4.6" followed by an information icon (a lowercase 'i' in a circle).

# Assignment Outsourcing Requests

## Need a Mechanical Engineering student/graduate to solve some questions (Mechanics of Solid)

I have a set of questions (10 in total) for a student knowledgeable about the Mechanics of Solids. Please I need someone with a fast turnover rate as the submission is due in about 8 hours.

Kindly go through the attached PDF first to see if you can solve the questions.

**19 freelancers are bidding on average \$44 for this job**







**Question:** Reykjavik, The Capital Of Iceland, Needs To Acquire A Piece Of Snow Removal Equipment To Keep Its Roads Safe Throughout The...

1. Reykjavik, the capital of Iceland, needs to acquire a piece of snow removal equipment to keep its roads safe throughout the winter. A used piece of equipment will cost \$85,000 and have a \$20,000 market (salvage) value at the end of its 5 year life. A new piece of equipment with more up to date capabilities will cost \$150,000 and have a \$40,000 market value at the end of its 5 year life. The used equipment will require more labor hours to operate than the new equipment, which will reduce labor hours by 20%. Current snow removal equipment costs \$50,000 per month to operate. Labor costs \$50 per hour. The interest rate is 12% per year (use amounts in USD).

This problem has been solved!

[See the answer](#)

# Homework Help Sites

# Contract cheating by STEM students through a file sharing website: a Covid-19 pandemic perspective

Thomas Lancaster<sup>\*</sup>  and Codrin Cotarlan

- **196% year-on-year increase** in student use of Chegg during the pandemic
- Focus on Science, Technology, Engineering and Mathematics subjects
- Questions of an exam style evident

<https://edintegrity.biomedcentral.com/articles/10.1007/s40979-021-00070-0>



Codrin  
Cotarlan

Posted by u/Processa **Verified Math and Stats Expert** 2 hours ago

**[TUTOR] SUMMER TIME DEALS | Will Take Your Entire Math/Stats/Physics Classes. (Pearson/ Mymathlab/ Myopenmath/WileyPLUS/ ALEKS/ Mymaths/MyStatLab \~ Safe & Secure VPN Available), Hw assignments, Quizzes & Tests, Midterm/Final Exams. Discord~ UnemployedProfessor#4746**

**Admin/math/stats Writer**

**Offering math/stats Help | Will take your Entire Class (Pearson/ Mymathlab/ Myopenmath/WileyPLUS/ ALEKS/ Mymaths/MyStatLab ~ Safe & Secure VPN Available), Hw assignments, Quizzes & Tests, Midterm/Final Exams.**



**Tutor Advertising**

# Hire students from Germany to help with your exams?

**Hans, 23**

**Maths**

*“Our rate is €100 an hour”*

**Jürgen, 26**

**Computer Science**

*“I’ve been a tutor at a university for four or five years now. I supervise study groups and help correct exam answers.”*





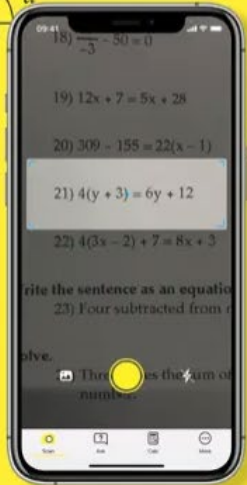
# Emerging Threats

# CameraMath - Homework Help

Solve Any Math Problem

# Solve your maths problems

Solve math problems in a snap



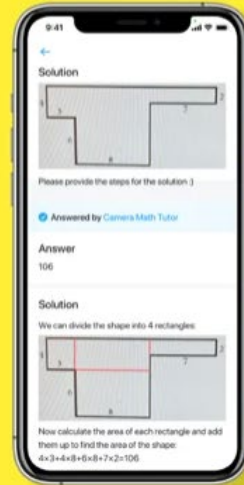
Choose between different methods



Learn with step-by-step explanations



Get Homework Help Online From Expert Tutors



# Ethics in artificial intelligence

Change Title

Word Count 250

B I U A   Normal   

✓ Sentence Creator

The philosophies of artificial intelligence is that role of the philosophies of engineering specific to robots and other artificially sophisticated entities. It will be split into one concern with the ethical conduct of humans as they design, create, apply and affect artificially sophisticated organisms, and machine philosophies, which is concerned with the moral behavior of artificial moral agents (AMAs ). It also includes these matters of individuality and superintelligence. " Robot rights " constitutes this idea that people should take ethical responsibilities towards their machines, related to human rights or animal rights. It has been proposed that robot rights, much as the place to live and accomplish its own work, would be related to robot work to provide human, by comparison with linking human rights to human duties before society. These would include the right to life and freedom, freedom of opinion and speech and equality before this police.

Michael Muller, the scientist for the high international engineering organization focused on being aspects of information science and ethics and beliefs in applications of artificial intelligence, said, " There are chances for substantial change. However, some of the positive social changes in the last century have come from

and national organisations , e.g., Charter 77.

orce – are often weakened under new technology  
ity may not be powerful enough to result in the

Paragraphs

Sources &amp; Citations

APA 

## Step 2: Add Citations

We found citations for your essay. Please choose one that fits your purpose. If you do not need citations, please return to "Paragraphs" tab.

Got it



Many diverse artificial intelligence (AI) are finding (moves) in proofs, and computer-

(Jul. 2018). Artificial intelligence. *Britannica*. Retrieved from [www.britannica.com/technology/artificial-intelligence](http://www.britannica.com/technology/artificial-intelligence)

The move to a consciousness of ethical AI is both a top-down and bottoms up approach. "There's a rising field of impact investing," explained Walworth. "Investors and shareholders are demanding something higher than the bottom line, some accountability with a way to measure it." *Forbes*. Retrieved from [www.forbes.com/sites/zarastone/2018/06/artificial-intelligence-ethics-committee/](http://www.forbes.com/sites/zarastone/2018/06/artificial-intelligence-ethics-committee/)

## Artificial Intelligence Led Threats To Academic Integrity

Dr Thomas Lancaster - Imperial College London, UK

European Conference on Academic Integrity and Plagiarism 2022  
#ECAIP2022

Imperial College  
London

# Generate your written assignments

usually installed by default

10:40

```
-- Repeatedly read a target board position and invoke tryMove until
-- the move is successful (Just ...).
takeTurn :: Board -> Player -> IO Board
takeTurn b pl
  = do
    putStrLn $ "Player " ++ show pl ++ ", enter a position (row col):"
    s <- getLine
    case parsePosition s of
      Nothing -> do
        putStrLn "Invalid position, try again."
        takeTurn b pl
      Just pos ->
        case tryMove pl pos b of
          Nothing -> do
            putStrLn "Invalid move, try again."
            takeTurn b pl
          Just b' -> return b'
```

4  
5 -- Manage a game by repeatedly: 1. printing the current board, 2. using

Github copilot autocomplete everyone

11:20

Gahahahah I typed literally two lines for  
the whole assignment and it did the rest

xD

11:23

Automatically  
write  
computer  
programs for  
you





**Preparing For  
The Future**

# Our Interventions

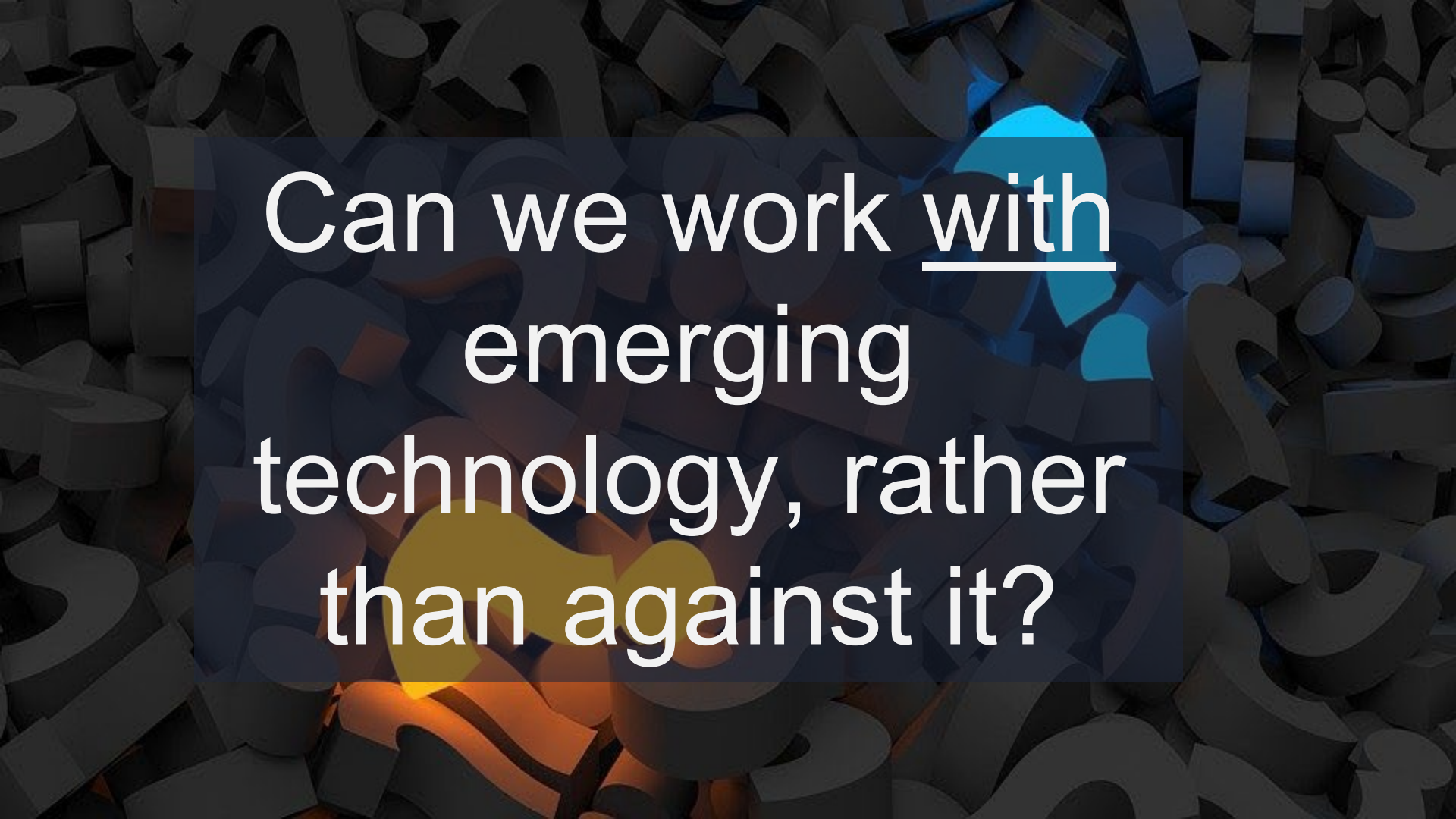
How do we ensure that **we are assessing a student** – not a hired worker or a machine?

Can we set assignments that engage and interest students?

What do we do to ensure that society has confidence in our engineers?

“In a time when technology and society are evolving with an increasing pace, engineers educated today need to be **prepared for the technology, society and challenges of tomorrow**. This rapid development not only has to be mirrored in **what we teach**, but also in **how and when we teach**.”





Can we work with  
emerging  
technology, rather  
than against it?



# Connect With Me

**My Email:** [thomas@thomaslancaster.co.uk](mailto:thomas@thomaslancaster.co.uk)  
**My Website:** <http://thomaslancaster.co.uk>  
**My Blog:** <http://thomaslancaster.co.uk/blog>  
**My LinkedIn:** <https://uk.linkedin.com/in/thomaslancaster>  
**My Twitter:** [@DrLancaster](https://twitter.com/DrLancaster)

**Slide Archive:**  
<http://www.slideshare.net/ThomasLancaster>

