

NYCU 國立陽明交通大學

114 學年度 特殊選才

百川學士學位學程

筆試題目

***注意事項：**

-本次試題共有四題，請依各題題目描述答題。請盡量依題目順序作答，並且註明題號。

-答題時，請在答案卷上作答，答題語言依各題規定。題目若未明示答題語言則可用中文或英文答題。在筆試題目卷上作答一律不計分。

-作答時間:100 分鐘。

一、隨著人工智慧的快速發展，被稱為「殺手機器人」的自主武器系統已經不再是科幻小說的場景。紐約時報與英國衛報在今年分別以“Artificial Genocidal Intelligence”以及“The machine did it coldly”為題報導以色列軍隊在加薩邊境部署了“自殺式無人機”，並在轟炸行動中使用了“Lavender”及“Where’s Daddy”兩個人工智慧系統，運用臉部生物辨識系統和自動目標生成系統追蹤鎖定可疑武裝分子及其關聯者，並據此進行轟炸，結果造成高死亡率，其中包括了大量傷亡的平民兒童與婦女。人工智慧系統將戰爭從傳統槍砲飛彈攻擊帶入了先進戰爭的未知領域，改變了軍事人員、平民與機器之間的關係，並引發了一系列對工程、法律和道德問題的挑戰，請回答以下問題：

‘The machine did it coldly’: Israel used AI to identify 37,000 Hamas targets

Israeli intelligence sources reveal use of ‘Lavender’ system in Gaza war and claim permission given to kill civilians in pursuit of low-ranking militants



📷 Palestinians search for missing people and victims under the rubble of a home destroyed after an Israeli airstrike in al-Maghazi refugee camp, southern Gaza. Photograph: Mohammed Saber/EPA

1. 你認為將人工智慧運用於現代戰爭將為世界以及人類文明帶來什麼後果？請盡可能從正反兩方回答。
2. 與傳統武器最大不同是，這些自主武器系統可以在沒有人為干預的情況下選擇和攻擊目標。一位使用過 Lavender 的以色列軍官便承認，“The machine did it coldly. And that made it easier.”你認為在武器 AI 化的時代，殺戮的責任是否且該如何重新定義？
3. 武器 AI 化的過程中，放大器、晶片等技術或零件是一大關鍵，谷歌和亞馬遜網路服務透過 Nimbus 計畫向以色列提供的雲端運算和機器學習服務，引起了內部員工的強烈抵制，「臺灣製造」的軍工科技已經證實被用於加薩走廊的殺戮中。你怎麼看待臺灣身為全球科技供應鏈的一環在這件事情上的角色？請連結前述的兩個回答論述本題。

二、The terms simulation and simulacrum have subtly different meanings. Simulation is defined first as "the action or practice of simulating, with an intent to deceive," then as "a false assumption or display, a surface resemblance or imitation, of something," and finally as "the technique of imitating the behavior of some situation or process...by means of a suitably analogous situation or apparatus". In total these three definitions convey the ideas that the simulation is usually of a set of actions, and furthermore is deceitful in its display of "some situation or process." In comparison simulacrum is defined as "a material image, made as a representation of some deity, person, or thing," as "something having merely the form or appearance of a certain thing, without possessing its substance or proper qualities," and as "a mere image, a specious imitation or likeness, of something". Like the simulation, the simulacrum bears a resemblance to the thing that it imitates only on the surface level, but as opposed to the simulation's mimicry of a process or situation, the simulacrum is defined as a static entity, a "mere image" rather than something that "imitat[es] the behavior" of the real thing on which it is based.

- Devin Sandoz, 2003 on Jean Baudrillard's Simulacra and Simulation

Please give an example of simulacrum in an English paragraph and provide corresponding explanations.

三、 **60 Second Science** is a series of science-related videos and podcasts that explore a variety of topics in a short format. Based on the transcript from the 60-Second Science podcast, write a short description (2–3 sentences) in English summarizing the main topic and purpose of the episode. Your summary should reflect the key points and focus of the speaker’s research.

Note: You may not copy exact sentences from the transcript. Instead, rephrase the content in your own words.

0:00

[TICKING CLOCK]

0:00

My name is Torrey Loucks. I am faculty in the Department of Speech and Hearing Science

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I am an affiliate at the Beckman Institute.

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My research focuses on the automatic mechanisms of speech production.

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I am trying to understand how it is that

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people can produce speech without thinking about how they produce it.

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I look at this both in the normal system and in the disorder system.

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My disorder focus is on stuttering and dysarthria.

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In stuttering I look at how these automatic systems break down between the

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formulation and encoding of speech.

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And in dysarthria I look at how the coordination between the lips, tongue,

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and jaw break down.

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To do this I use functional neuroimaging technologies and also use

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advanced motion capture technologies in order to look at the

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coordination of the lips, tongue, and jaw.

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This research is important, as i said, because it allows for us to understand

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the automatic mechanism such that a person can produce what they want to

1:00

say without having think about how to produce it.

1:03

[BUZZER SOUNDS]

四、在世聰家除了世聰，還有三位成員，父親、母親、弟弟（國棟）。某一日，世聰家四位成員在打橋牌，世聰與國棟一組，父親與母親同一組。橋牌是使用 52 張撲克牌的紙牌遊戲，52 張撲克牌是包含四種花色（黑桃、紅心、方塊、梅花），每一種花色有 13 種點數（A、K、Q、J、10、9、8、7、6、5、4、3、2）。首先，由國棟開始發牌，每位成員拿到 13 張撲克牌。

1. 由於國棟在發牌時，沒有發好，把世聰前面的牌現開了，是一張"紅心 A"；因此，國棟收回所有的牌，重新發牌。試問世聰再次拿到"紅心 A"的機率是多少？
2. 在國棟重新發牌後，每位成員手上均有 13 張撲克牌。試問世聰恰拿到三張點數為 K 的機率是多少？

*請注意本題作答說明

[1] 以中文或英文答題皆可。

[2] 除了寫出答案外，必須將推理或解題過程說明清楚。

[3] 只有答案而沒有計算或推演過程，將不予計分。

(考題結束)