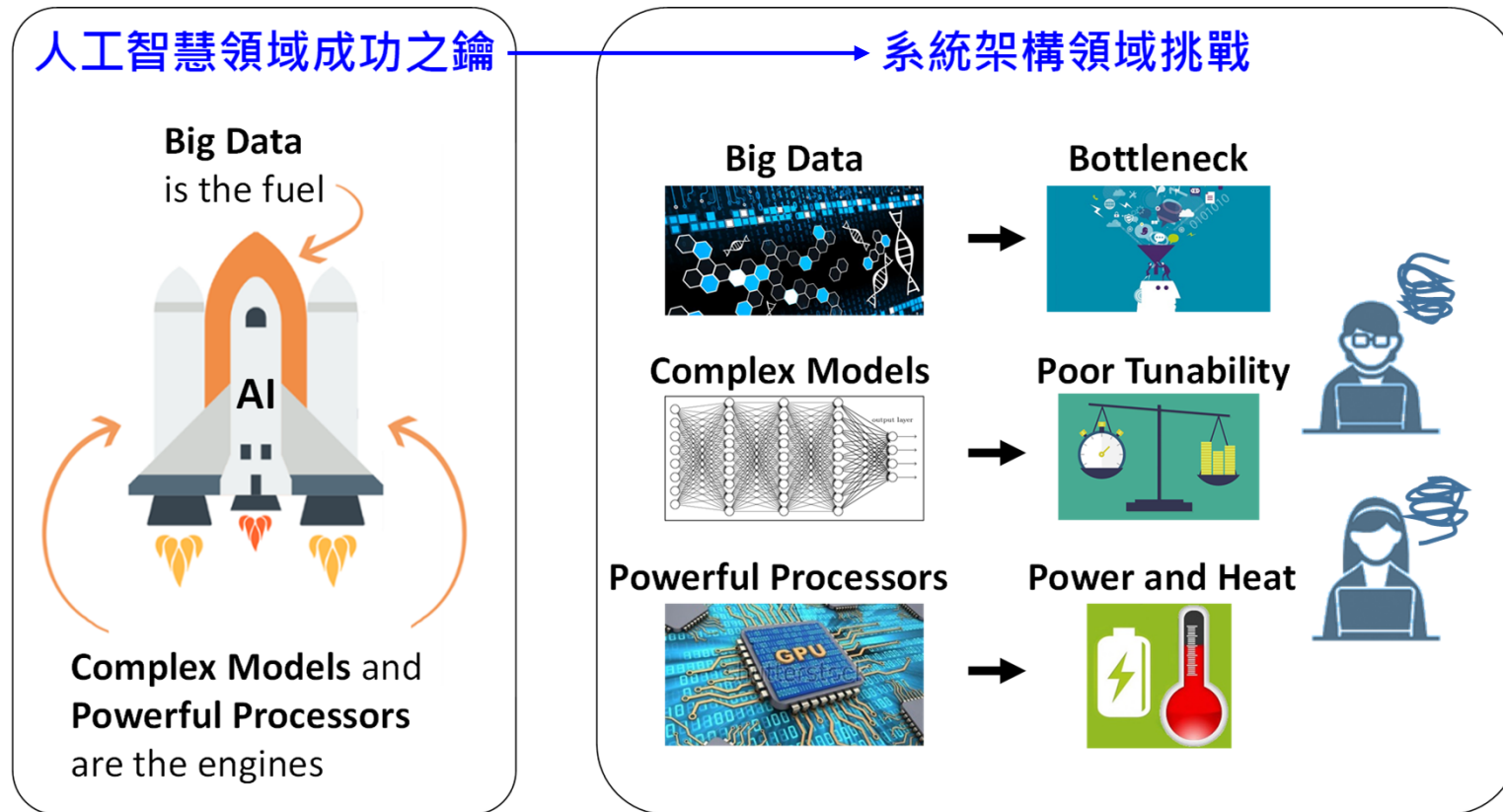


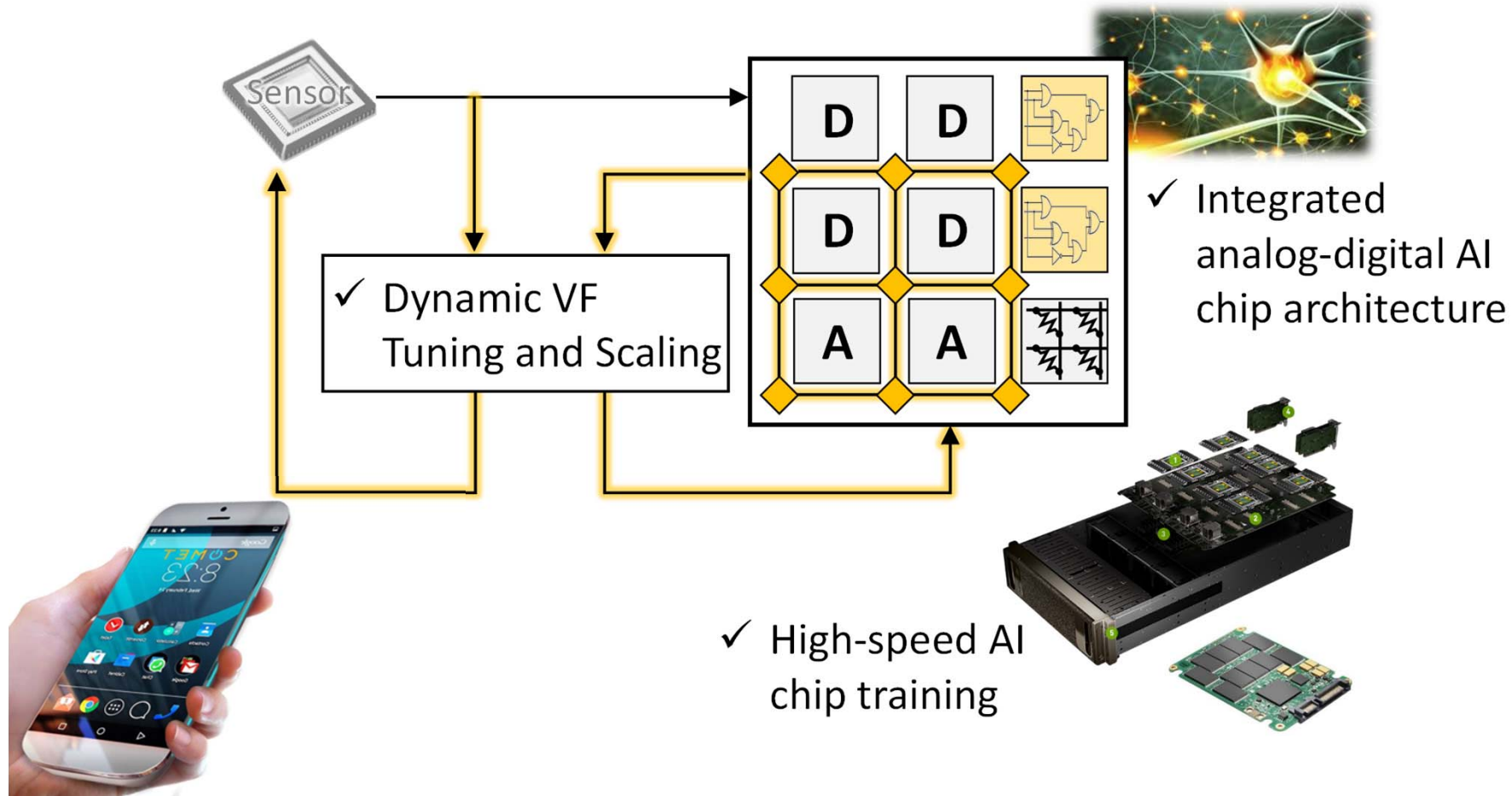
System Architecture Support for the Emerging AI Era (呂仁碩)

- System architecture design and research are important



System Architecture Support for the Emerging AI Era (呂仁碩)

- Three design and research directions



System Architecture Support for the Emerging AI Era (呂仁碩)

- Dynamic V/F Tuning and Scaling

- Different products demand different AI chip specs
- Avoid fabricating many chips



- Analog-Digital Integration

- Analog and digital systems have their own strengths
- 依賴直覺的工作類比AI耗能少；超出直覺的工作，例如辨識大量數據的樣式，則是數位AI耗能少



- High-Speed Training

- Ordinary desktop computers take 2+ days to train a basic neural network such as AlexNet
- Future models will be more complex and training dataset will become larger

