PUC RIO

SACRU
STRATEGIC ALLIANCE OF CATHOLIC RESEARCH UNIVERSITIES

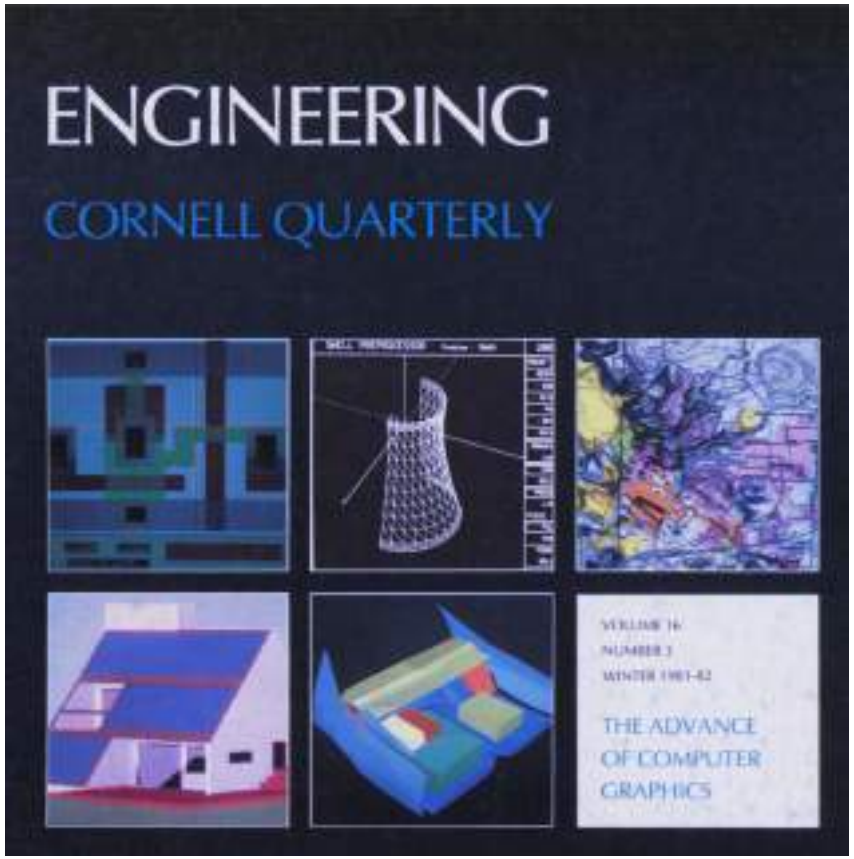
THE FUTURE OF CATHOLIC UNIVERSITIES IN THE AI AGE

A Review of the Last 40 Years in Computer-Aided Changes in Society and Education

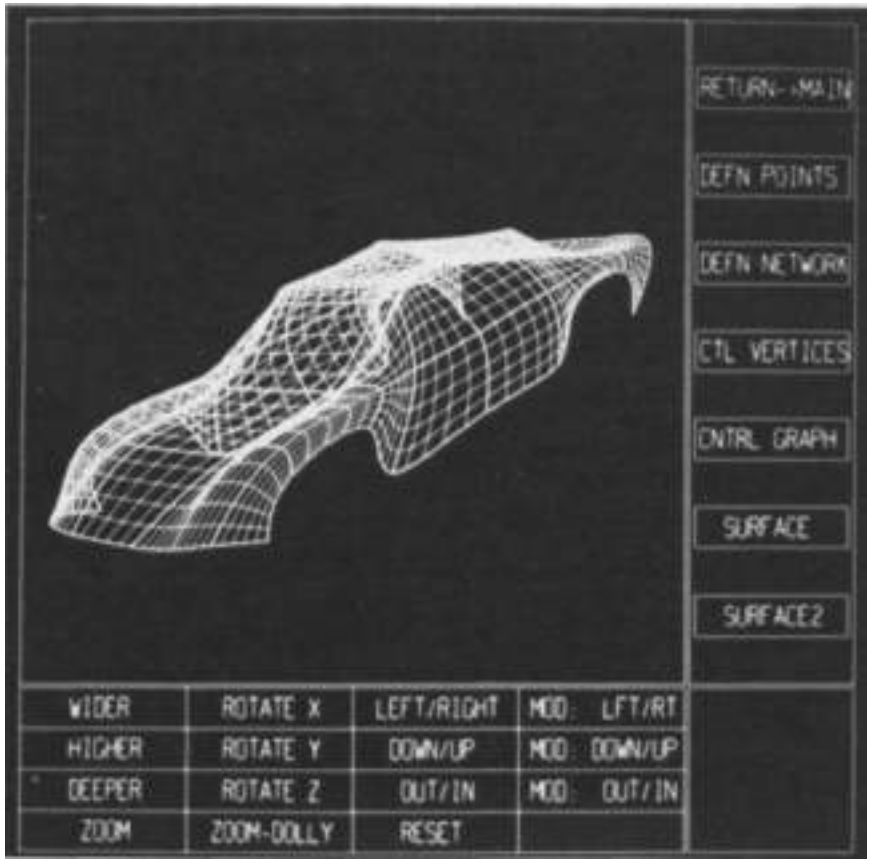
Prof. Marcelo Gattass
Professor of Computer Science
VP for Innovation and Development

"It is no longer feasible to ignore the graphics technology."

"...both the machine and the person do what they can do best."

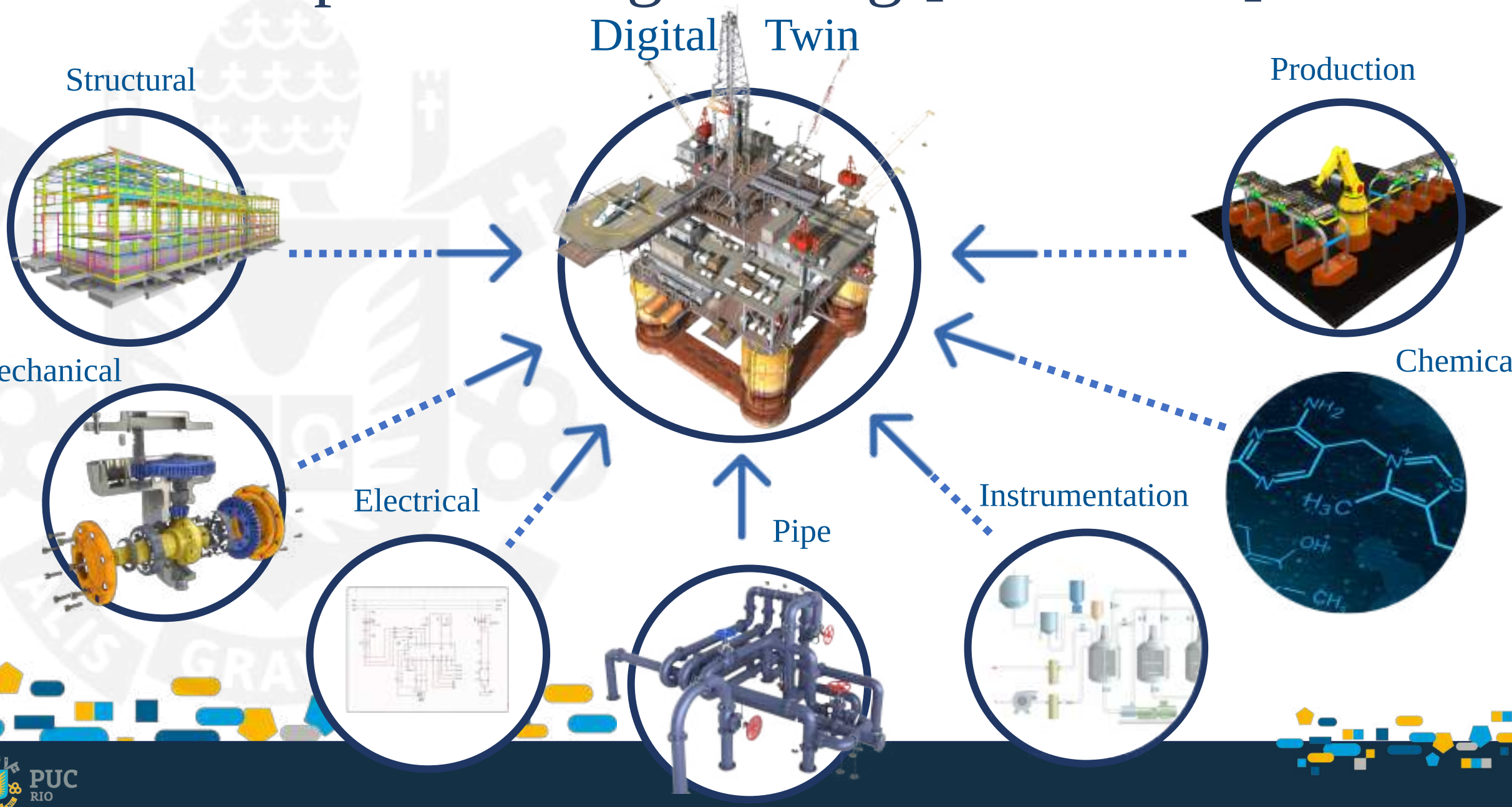


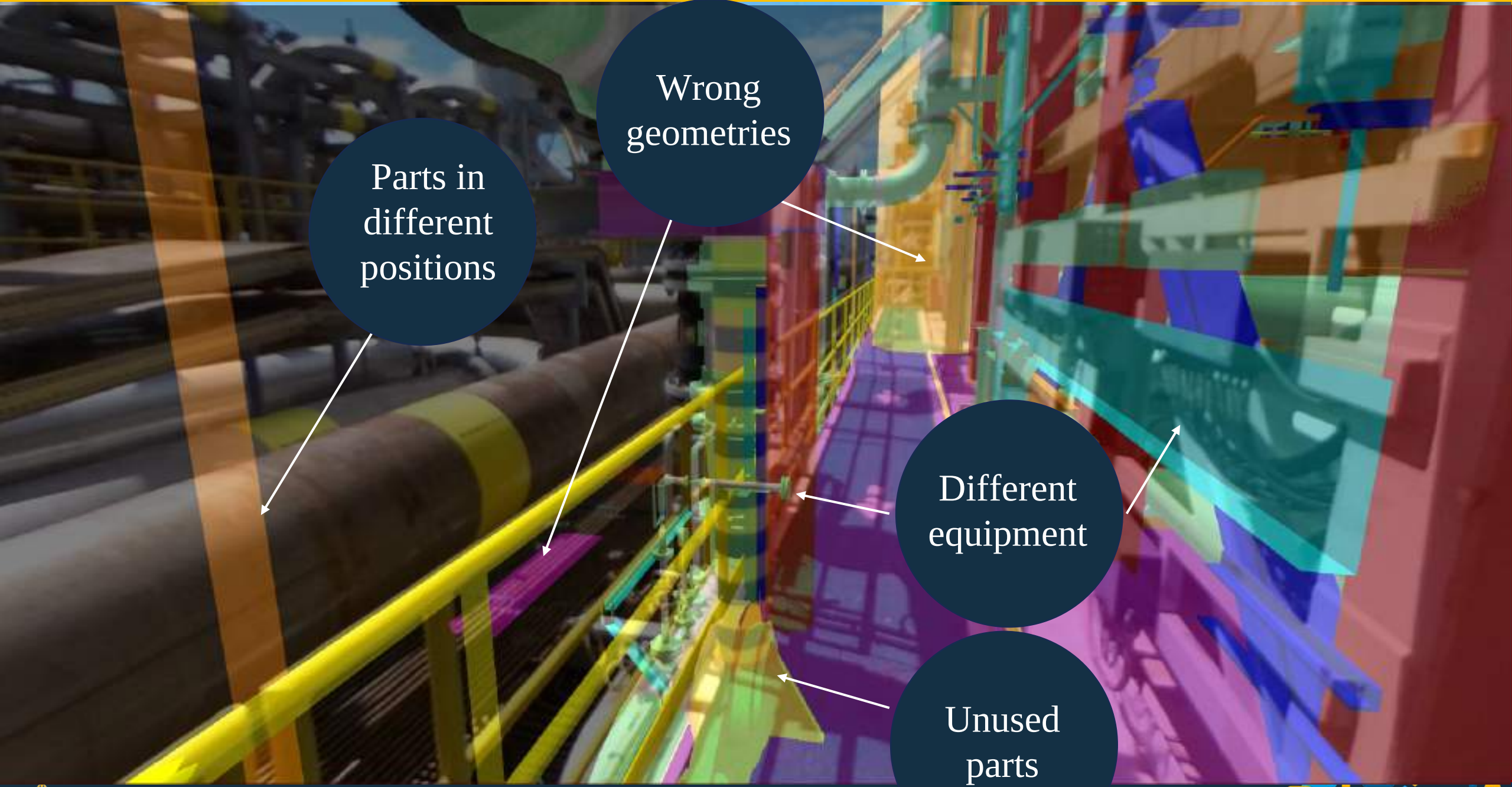
1978-1982



https://ecommons.cornell.edu/handle/1813/2418

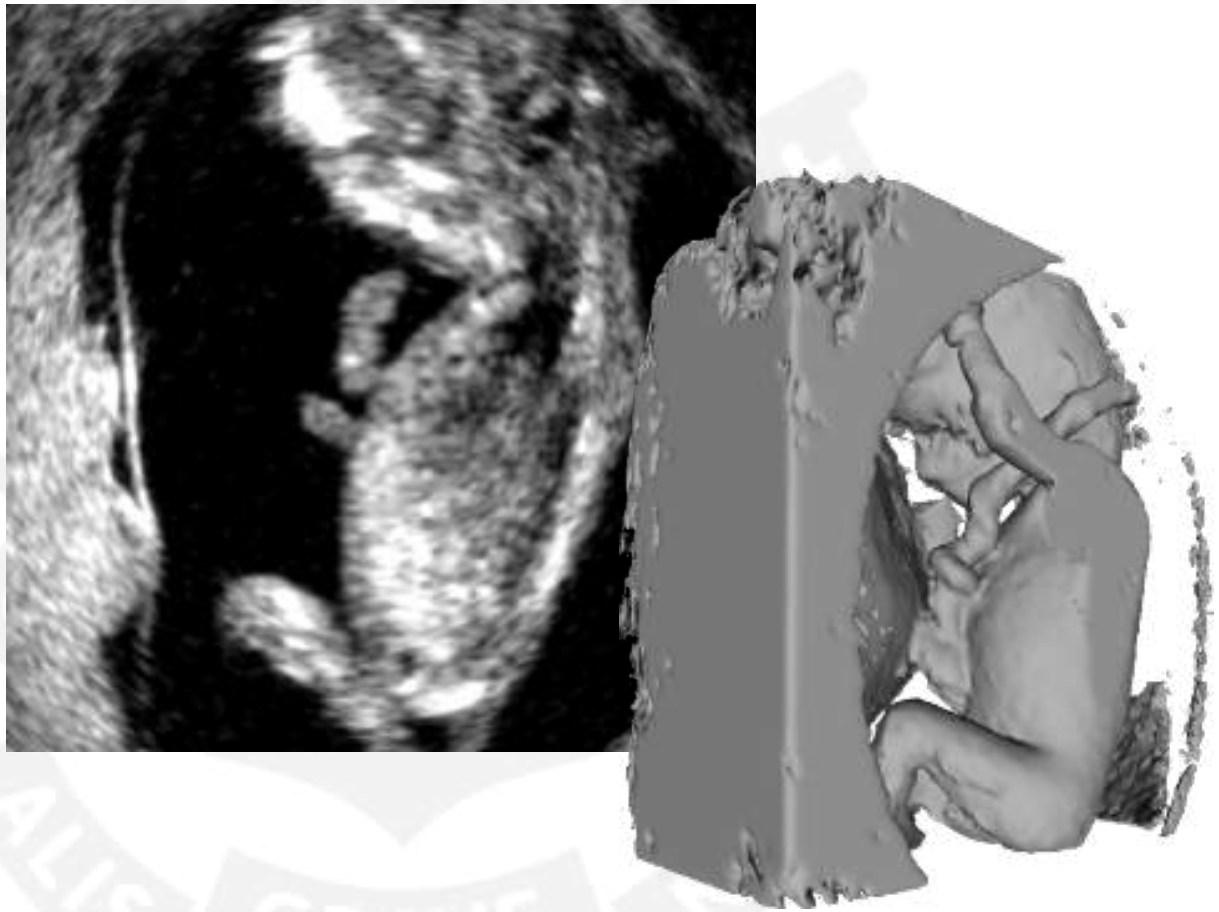
Impact on Engineering [Education]




Wrong geometries
Parts in different positions
Different equipment
Unused parts

Sports

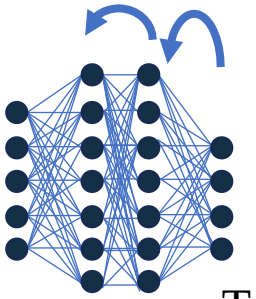
Medicine



[Global] Automation Revolution

CAD/CAM

Social Media



RNN

Transformers

Emergence of Functionalities

LLM

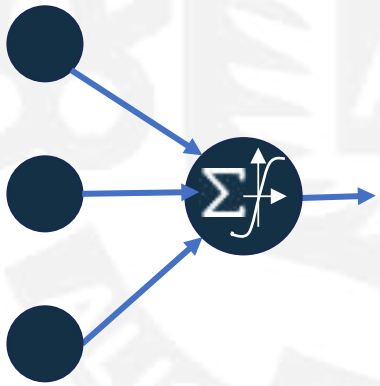
Homogenization

Text

Vision

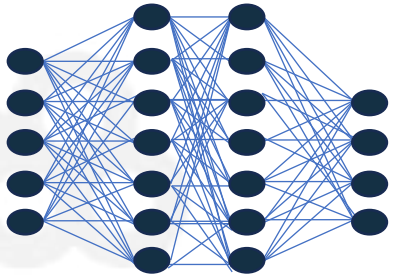
Voice

PERCEPTRON

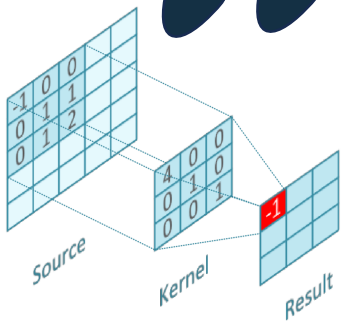


ARPANET

INTERNET



DNN



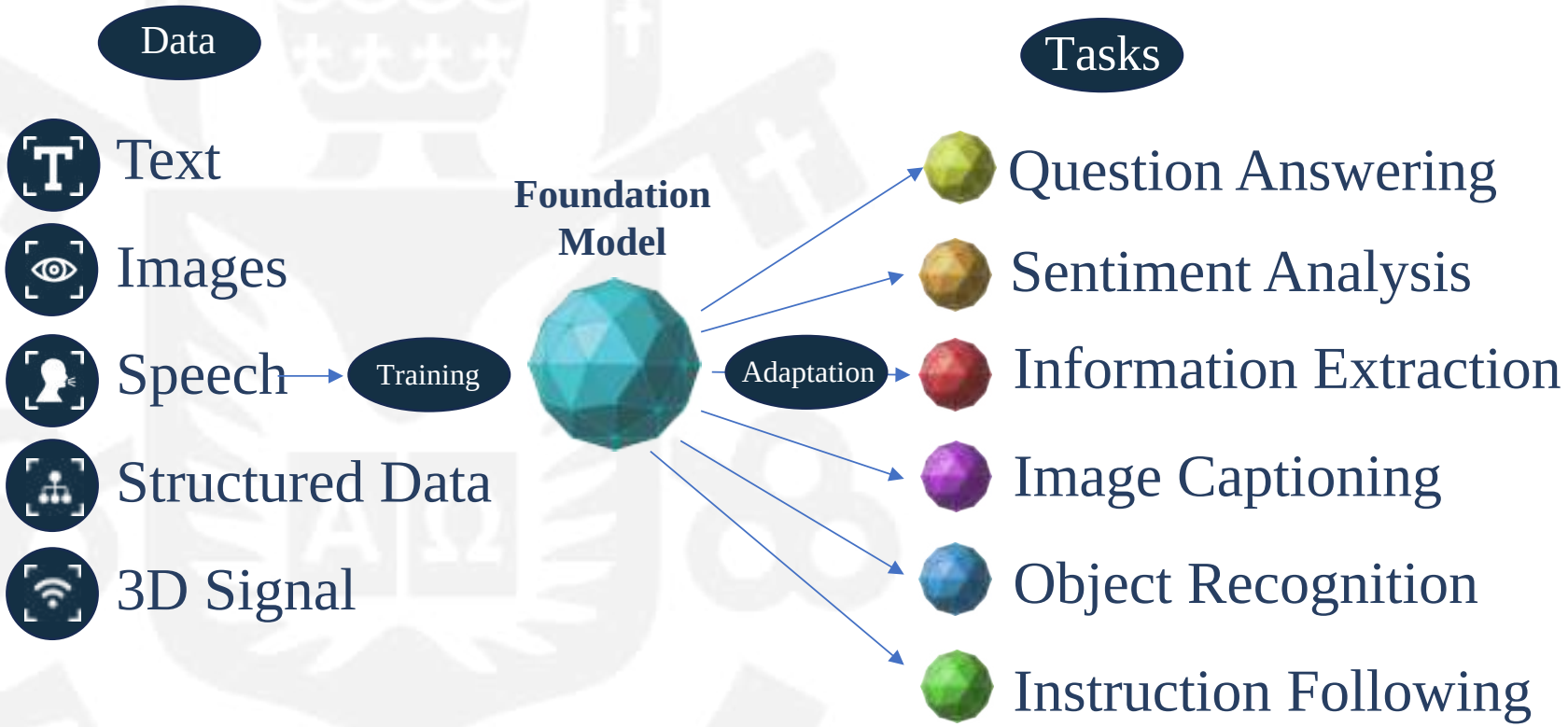
CNN

F
M

1960 1970 1980 1990 2000 2010 2020 2022

2019 – Foundation Models

Mary,
Pode tornar legível?



Billions of parameters

Universities?

https://crfm.stanford.edu/assets/report.pdf

KEANU REEVES
LAURENCE FISHBURNE
MATRIX
ON MARCH 31 THE FIGHT FOR THE FUTURE BEGINS

TOM CRUISE
MINORITY REPORT
EVERYBODY RUNS JUNE 21

MAIN

SCHWARZENEGGER
TERMINATOR

On January 18, 2000, the rupture of the oil pipeline spilled 1.3 million liters of oil into the Guanabara Bay.

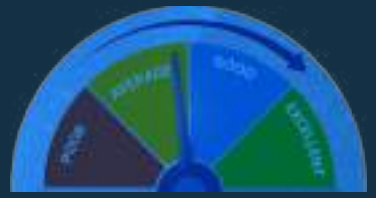
Photo: Museu do Amanhã/Divulgação.

The same technology that empowers humanity to build great things also empowers catastrophic mistakes.

University role

InfoPAE
"Desenvolvido pela PUC-Tecgraf."

Countries are now discussing laws to regulate activities



credit rating

identification of persons

individual assessment of the risk of committing crimes, personality traits, and criminal behavior

administration of justice

medical diagnoses and procedures

evaluation of students and workers

decision-making about access to employment, education, or essential public and private services

implementation of autonomous vehicles

management of critical infrastructure, such as traffic control and water and electricity supply networks

others that may proven necessary

Source: Brazilian Senate Agency

Five challenges for our universities

1. Update curricula to reflect the changes in professional activities, emphasizing opportunities and the comprehension of potential risks;
2. Identify and clarify for society the risks and opportunities of new technologies, with particular attention to those risks that aggravate social inequality and discrimination;
3. Aid companies to mitigate the risks of the deployment of these technologies;
4. Aid governments in regulating the usage of these technologies,
5. “Form students into thoughtful and discerning human beings capable of engaging in sustained reflection on important human issues.”

The end or a new beginning?

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