# THE WEBINAR WILL START IN A FEW MOMENTS

DATUM ACADEMY

# AI & BIG DATA WEBINAR

## FOCUS ON LATIN AMERICA

*WITH THE PARTICIPATION OF*

ESTIA INSTITUTE OF TECHNOLOGY · ORACLE University · Google Cloud · INDICATIC-AIP · SENACYT Secretaría Nacional de Ciencia, Tecnología e Innovación · UTP · t-eco group for a smarter future · UNIVERSIDAD DEL QUINDIO · CESAR school · AiBox Lab

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# Program Content

Pr. Serge Miranda : AI Edtech strategic vision

Eli Faskha : Technology sector in Panama

Pr. Phillipe Aniorté : Major areas of research of applied AI in Panama

Constanza Alvarado Mariño : Objectives & Actions of Datum Latin America “DATUM LATAM”

Pr. Faber D. Giraldo: Major areas of research of applied AI in Colombia

Prof. Dr. Rafael Ferreira Mello : Using AI to Support Good Quality Education for All

Joel Peña : Major trends of applied AI in Santiago de los Caballeros

Eddy Martinez : Major trends of applied AI in Latin America

Valérie Hayotte : Professional skills in applied AI & Big Data at Oracle University

Merlin Yamssi : Strategic vision in Applied AI & Cloud from Google Cloud

Pr. Serge Miranda : Our AI EDTECH proposal around BIHAR /eBIHAR MSc from ESTIA

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# AI Edtech Strategic Vision

Pr. Serge MIRANDA

*Scientific Director of MSc BIHAR (ESTIA)*
*President of DATUM ACADEMY*


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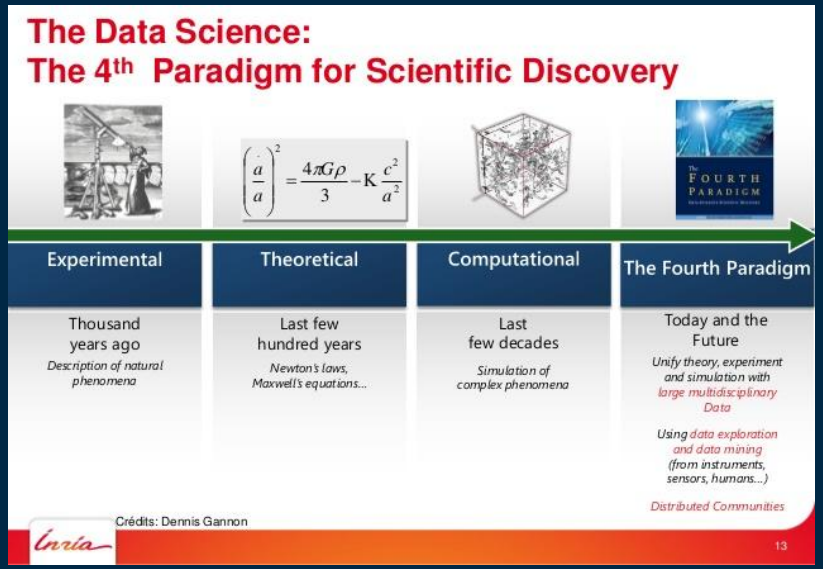
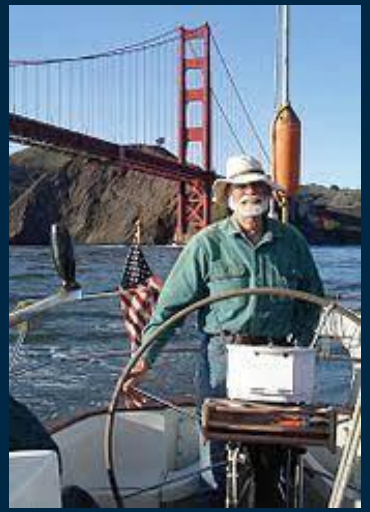
# Major IT disruption in the DATA ECONOMY

## *« the 4th (DATA-centrics) paradigm of science »* (Jim Gray)



Jim GRAY, IBM, .. Microsoft
(TURING AWARD/*Nobel Prize in Computing* 1998)

**BIG DATA and the 3 « V » (for the 3 « P » and the « 3 « R »)**
DATA processing : DATA management & DATA analysis
**1 PETA (10*15), 1 ZETA (10*18), 1 EXA (10*21), 1 YOTTA (10*24)**

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# Two major e-learning disruptions amplified by COVID MOOCs and SKILL tsunamy : Towards « MULTIVERSITY * » of the future with HYBRID learning !

The future of work will be a race between education and technology facing a SKILL crisis!

◎ The decline of universities and the emergence of HIGHER education" PAUL GIBBS ( "Thinking about higher education" Springer 2014)

◎ No more frontier between EDUCATION (top down) and LEARNING (bottom up)

**From CENTRIPETE universities of the past towards CENTRIFUGAL MULTIVERSITIES of the future !**

* (Clark Kerr, Berkeley, 1962)

10 ÉCONOMIE
*Serge Miranda*

## DE L'UNIVERSITÉ CENTRIPÈTE À LA *MULTIVERSITÉ* CENTRIFUGE

Le néologisme *multiversité* (*multiversity*)[1] a été utilisé la première fois par Clark Kerr président de l'Université de Californie en 1962, avant l'embrasement du campus de Berkeley de 1964 ! La multiversité de Kerr, synonyme de « *knowledge industry* » marquait le basculement entre l'enseignement théorique traditionnel universitaire et l'enseignement appliqué lié à l'industrie. Un nouveau basculement est en cours avec la révolution des MOOCs et de l'Intelligence Artificielle.

La révolution des MOOCs (*Massively Open On line Courses*) est apparue cinquante ans plus tard, un peu plus au sud de Berkeley, à Stanford. Elle a bouleversé l'univers de l'enseignement à distance avec les plateformes de diffusion de MOOCs comme Coursera[2], Udacity[3], Edx[4] et FUN[5]. En plus de l'enregistrement vidéo des cours, les MOOCs apportent trois principales fonctionnalités pour l'apprenant en ligne: un réseau social des apprenants (avec un *community manager* en mode supervision) permettant de créer une classe virtuelle et de créer une communauté, un video-tutoring (de plus en plus personnalisé) avec le professeur, une interaction systématique et régulière entre apprenants et professeurs rendant le cours inter-créatif (Exemple : exercices corrigés par les étudiants en mode pair-à-pair). À la fin 2018, plus de 900 universités dans le monde avaient créé plus de 11 000 MOOCs[6].

Des diplômes en ligne informatiques universitaires existent aujourd'hui tant aux États Unis (le premier diplôme sous forme de MOOC étant le master informatique de Georgia Tech depuis 2014 sur la plateforme Udacity[7]), qu'en Europe (le premier étant le master eMBDS d'UCA depuis octobre 2019 sur la plateforme FUN[8]). L'enseignement, qui est basé sur une distribution de CONTENUS pédagogiques (en mode *brick and mortar*, i.e. de concentration dans un espace fixe centripète avec une diffusion *top down*), va connaître la même révolution que tous les acteurs traditionnels de vente de contenus et de services comme la musique, la vidéo, la banque, le transport ou le commerce, avec de nouveaux acteurs exclusivement en ligne ou hybrides avec des tiers lieux à inventer (pouvant être le domicile).

« TOUT LE MONDE EST UN GÉNIE. MAIS SI VOUS JUGEZ UN POISSON SUR SES CAPACITÉS À GRIMPER À UN ARBRE, IL PASSERA SA VIE À CROIRE QU'IL EST STUPIDE. »
ALBERT EINSTEIN

La pandémie du Coronavirus a amplifié la mondialisation numérique (télétravail, télémédecine, téléenseignement, transformation digitale des entreprises) et la mondialisation financière en remettant en cause la mondialisation des marchandises et des personnes ! Nous nous intéressons ici au téléenseignement qui s'inscrit dans une mutation profonde notamment dans l'enseignement supérieur.

L'Intelligence Artificielle va contribuer à une transformation des modes d'apprentissage, de suivi des apprenants et d'obtention de diplômes tant au niveau des étudiants que des professeurs, avec des institutions qui vont devoir évoluer vers de la diffusion multicanal de type *click and mortar* en utilisant la dimension disruptive des MOOCs. L'intelligence Artificielle et les MOOCs marquent un basculement vers une nouvelle ère dans l'apprentissage autour des 3P (comme en médecine) : Personnalisation, Prédiction (réussite et échec) et Prévention.

En perspective, le but ultime reste la définition de chemins personnalisés d'apprentissage et de réussite vers un diplôme visé.

En conclusion, « *Notre civilisation produit cent fois plus de connaissances par siècle soit un million de fois plus aujourd'hui par rapport au XVIIIe siècle !* » (François Taddei, décembre 2019) et on ne peut imaginer passer un million de fois plus de temps dans l'apprentissage à l'école et à l'université !

Nous avons utilisé ici la multiversité dans un sens privilégiant l'axe multi-dimensionnel de l'apprentissage académique intégrant les MOOCs et l'IA. L'apprentissage académique va devenir multiple (synchrone et asynchrone), multicanal, multiforme (classes inversées) avec la diffusion et l'intégration de MOOCs, en un mot *multiversitaire* !

Serge Miranda, l'auteur de cet article, est directeur du master Miage MBDS, www.mbds-fr.org, et du premier master européen en informatique sous forme de MOOCs (eMBDS).

1 Frederic Robert dans https://journals.openedition.org/lisa/3081 et Clark Kerr « The uses of the university" Harvard Univ Press, 1972
2 https://www.coursera.org
3 https://www.udacity.com
4 https://www.edx.org
5 https://www.fun-mooc.fr
6 https://www.edsurge.com/news/2019-01-02-year-of-mooc-based-degrees-a-review-of-mooc-stats-and-trends-in-2018
7 https://www.udacity.com/georgia-tech
8 http://univ-cotedazur.fr/contenus-riches/actualites/fr/universite-cote-dazur-lance-son-premier-master-informatique-en-ligne

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# AI and BIG DATA … and SKILL demand tsunamy

◎ **World Economic Forum 2020 : « *From now to 2025, half of active jobs will require up-skilling or re-skilling »!***

◎ **Mckinsey Sept 2018 « *AI will create USD 13 trillion* GDP growth by 2030 most of which in non-Internet Sector »**

◎ Harvard Business Review, Dec 2019, p40) AI will contribute to 13 trillion dollars to the global economy over the next 10 years AI Is colonizing every sector of our economy and society: finance, health, marketing, agriculture, sport, art, press, education, etc.

◎ ACCENTURE, for G20 summit, 2018 " If skill building does not catch up with the rate of technology progress the G20 economy could lose up to 11 trillions US dollars in cumulative GDP Growth in the next 10 years"!

◎ *Trillion (10**12; TERA); billion (10**9; GIGA)*

◎ How to accelerate SKILLS acquisition in the age of intelligent knowledge ?

**◎ Customized "GRADEOS"/CERTIFICATES filling the traditional gap between universities and the economy both for computer scientist and managers**

GRADEO

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# The 4 ages of AI (born in the 50's like computers)

**« AI » : 2 underlying scientific disciplines**

- AI « SCIENCE » (*Mathematics*, Biosciences)
- **AI « Engineering »** (*Computing* and BIG DATA with last AI revival 10 years ago)

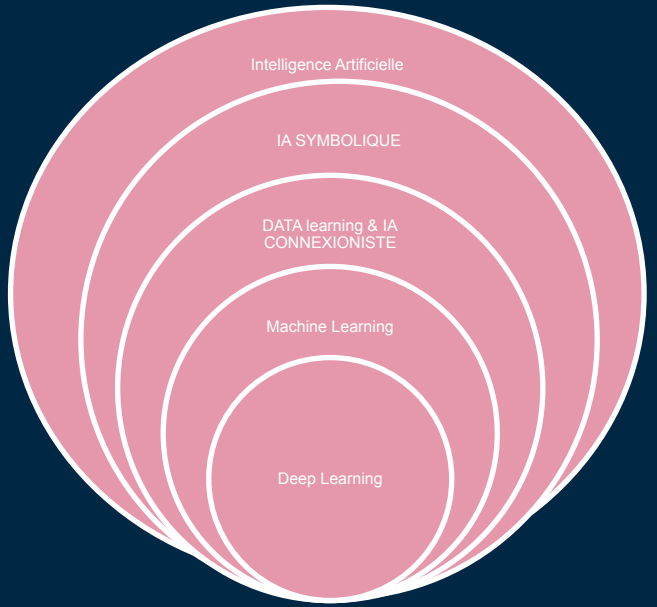
 MBDS & BIHAR Masters

**4 AGES of AI** (with 2 winters) since 1956 and Mc Carthy definition of ARTIFICIAL INTELLIGENCE

- AGE1 (<2012): **SYMBOLIC AI** (Rules and mathematics)
- AGE2 (with BIG DATA) : **DATA-centrics AI** with Machine learning and promising **DEEP LEARNING** (*Turing award in 2019)*
- **AGE3: SPECIFIC AI** with *digital twin* on ANY HUMAN ACTIVITY ( from cars, health, HR, to Agriculture) 

**POCs/GRADEOS and Bihar DATA LABS**

- AGE4 (>2050) : **GENERIC AI** (*Strong AI*) ??




AI CONCEPTS

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# AI Teaching in France – FRANCE 2030 report (□ building BIHAR curriculum)

HUB FRANCE IA - NUMEUM

FRANCE 2030 & PIA4
IA - DATA - CLOUD

DIRECTION GENERALE DES ENTREPRISES
COORDONNATEUR DE LA STRATÉGIE NATIONALE POUR L'IA

14 DECEMBRE 2021

# Dec 2021 French national Report : FRANCE 2030
# 3 basic jobs in AI

1) (Big) **DATA SCIENTIST**

2) (Big) **DATA ENGINEER**

3) (Big) **DATA**-centric **APPLICATION DEVELOPER** (web & mobile)

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# AI learning targets

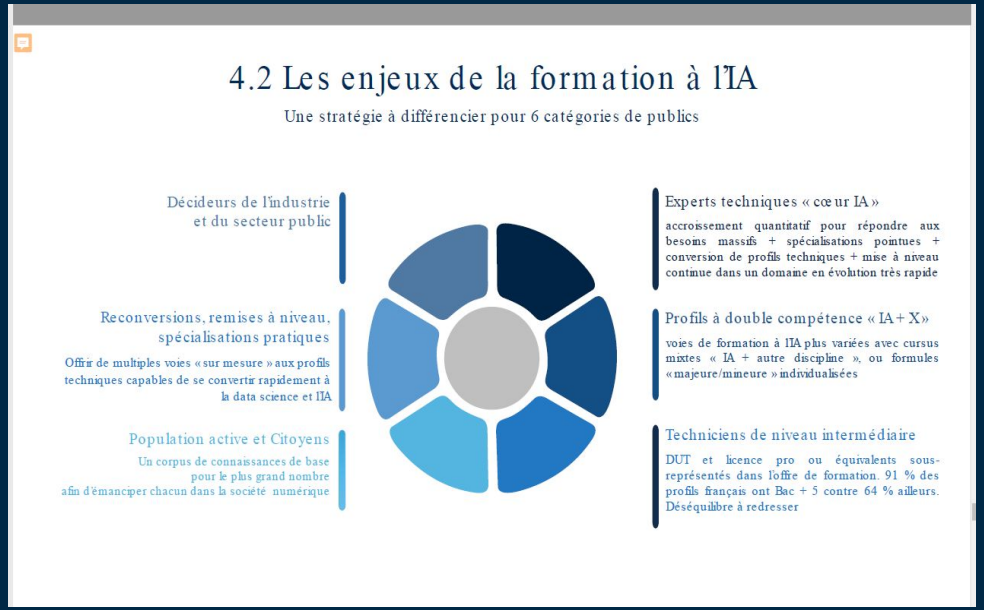
**COMPUTER SCIENTISTS**

- data scientists and big data architects
- general-purpose CS and dual skilling
- technicians

**MANAGERS**

- deciders
- Middle management
- active employees and citizens

(cf AI360 MOOC)

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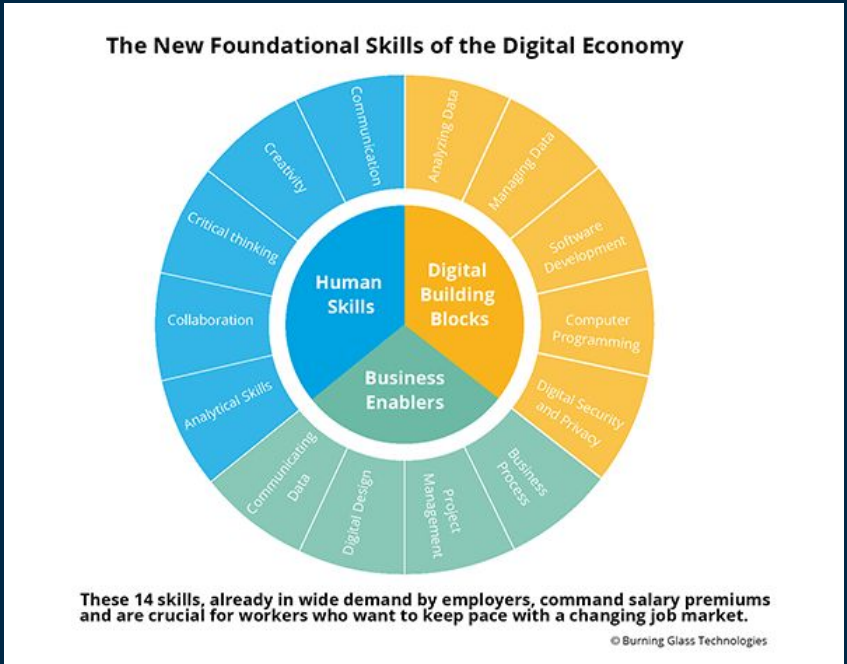
# Graduate foundation skills in the data economy




Blocs de compétences visés par MSc BIHAR

**Compétences numériques (ABCDE)**
- ◎ Gestion de données
- ◎ Analyse des données
- ◎ Développement d'applications
- ◎ Cybersécurité et Cloud

**Compétences business**
- ◎ Gestion de projet
- ◎ Communication de données

Compétences humaines / soft skills
(à travers des projets et des cas d'usage industriels)
- ◎ Créativité
- ◎ Collaboration
- ◎ Compétences analytiques
- ◎ Esprit critique
- ◎ Communication

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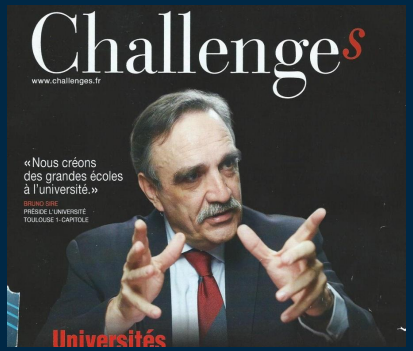
# Our legacy and lessons from 30 years of successful MBDS master of Science at University of Nice (UCA, France) leading to the 2 first on-line master degrees in Europe based upon MOOCs

**eMBDS in 2019 at UCA with ORACLE**
**eBIHAR in 2020 at ESTIA with GOOGLE & ORACLE**

May 2009 : Demo of a NFC shopwindow to Nice Mayor (C. Estrosi)
Nice : an NFC city (1st in Europe)
« *due to MBDS innovation lab* » in May 2010




« MBDS is a unique (French) master degree in ICT along with an innovation laboratory on information services for the digital Future » Professor Stuart Madnick (MIT, September 2014)

« Golden asset of universities » Le Nouvel Observateur, 2013

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# MBDS since 1992 & eMBDS (Université Cote d'Azur, France) since 2019 with ORACLE

◎ MBDS master legacy since 1992 (with eMBDS launched in 2019 at University of Nice in SOPHIA ANTIPOLIS)

◎ One of the best master degrees in CS in France (SMBG ranking)

◎ DATA BASE & BIG DATA management centrics

◎ MBDS : Delocalized in Haïti, Morocco, Madagascar and Russia

MAJOR MBDS LESSONs : "**LEARNING BY DOING**"

- **INNOVATION LAB with master** Student POCs (POVs) with industry financial support
- KNOWLEDGE creation
- Sustainability
- Employability

- Gradeos "BY EXAMPLE" (around POC) like "AI360 MOOC" in 2022

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# eMBDS launched in 2019 with Oracle on FUN platform (in English only)

**eMBDS launching in Paris on March the 29th 2019;** Valérie Hayotte (Oracle University), Pr Emmanuel Tric (President of University of Nice), Pr Serge Miranda (Director of MBDS and eMBDS degrees) and Catherine Mongenet (Dir. of FUN Mooc platform)

# SKILL tsunamy with “GRADEO” answer in Europe : MICRO-CREDENTIALS « leading to jobs »

Google Cloud

# Technology Sector in Panama

Eli FASKHA

*Former Chairman of the Board of Directors of CAPATEC, Panama*

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PILARES DE LA ESTRATEGIA
PANAMA HUB DIGITAL
TALENTO HUMANO
INFRAESTRUCTURA FISICA Y SOCIAL
MARCO LEGAL Y REGULATORIO
SECTORES FINANCIEROS
Red Universitaria
Ciberconocidolos
OPTIC
INDICATIC
Ley de AIF
Ley de laboratorios
Facturación digital
CAPAtec
PANAMA HUB DIGITAL

# Major Areas of Research of Applied AI in Panama

**Pr. Phillipe ANIORTE**

*Director of INDICATIC AIP (Instituto Nacional De Investigación Científica Avanzada en TIC Agencia de Interés Publico) in Panama*


INDICATIC-AIP
Instituto Nacional de Investigaciones Científicas Avanzadas en Tecnología de Información y Comunicación AIP

SENACYT
Secretaría Nacional de Ciencia, Tecnología e Innovación

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# INDICATIC – Objetivos

- Instrumento de la estrategia nacional Panamá hub digital
- Transición / transformación digital
- Sistemas Inteligentes (Smart Systems) para varios dominios
- Basados en entornos conectados (IoT y IoE)

=> Sistemas Ciber Físicos (Cyber Physical Systems)

# INDICATIC – Líneas de investigación

- Diseño e implementación / integración de esos nuevos sistemas

- Procesamiento de los numerosos datos generados con el fin de tomar decisiones

⇒ Palabras claves:
  - ⇒ arquitectura de sistemas, (meta)modelos (de oficio y tecnológicos)
  - ⇒ **Big Data**, **IA**
  - ⇒ **…**

INDICATIC-AIP

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# INDICATIC – Alcance

- Una **investigación aplicada**
- en articulación con:
  - la **docencia** (postgrado M y D)
  - la **innovación** (empresas)
- en un contexto de **internacionalización**

=> Proyecto **DATUM Academy**

# INDICATIC – Acciones

- **Campus Digital Conectado** (CDC) hospedado en la UTP (Panamá):
  - Formación virtual:
    - **Master IA**
    - **Gradeos** sobre tecnologías avanzadas (dirigidos a empresas)
  - **Proyectos con empresas** (Proof of Concept - POC) en espacios dedicados (Data Lab)

- **DATUM LATAM**: representación de DATUM Academy en América Latina basada en Panamá

INDICATIC-AIP

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# Objectives & Actions of Datum Latin America "DATUM LATAM"

Constanza ALVARADO MARIÑO

*DATUM LATIN AMERICA Director*


INDICATIC-AIP

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# DATUM LATAM – Objetivos generales

- Federar los CDC en Latinoamérica:
  - agilizar la colaboración entre los campus de LATAM
  - compartir buenas prácticas

- Intercambiar con los otros DATUM (Africa...)

- Ampliar las actividades:
  - crear nuevos campus
  - aumentar el número de aprendientes

# DATUM LATAM – Acciones

- Promover las formaciones propuestas
  - Master (academia)
  - Gradeos (empresas)

- Buscar sponsors
  - Empresas
  - Organismos Estado y otros, Gremios
  - Bancos

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# Major areas of research of applied AI in Colombia

Pr. Fáber D. Giraldo VELÁSQUEZ

*Professor, Quindio University, Colombia*

UNIVERSIDAD DEL QUINDIO

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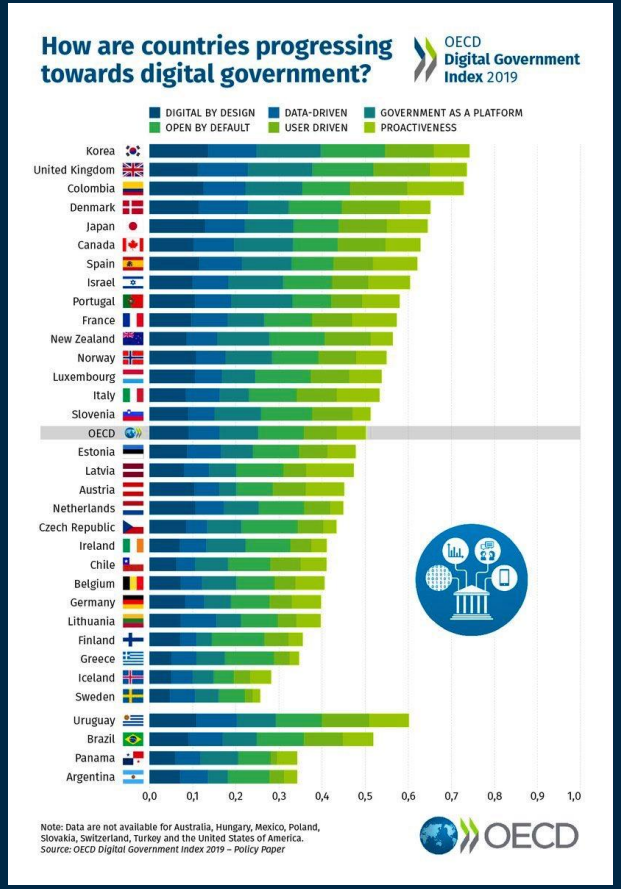

https://twitter.com/EconomyInformal/status/1565799995894267908

https://gobiernodigital.mintic.gov.co/portal/Politica-de-Gobierno-Digital/

inteligenciaartificial.gov.co/publicacion/10/
GOV.CO
Política Nacional para la Transformación Digital e Inteligencia Artificial (Conpes 3975)
La política plantea las condiciones para potenciar la generación de valor a través de las tecnologías digitales y promueve las condiciones para el impulso de la IA como acelerador de la productividad y favorecer el bienestar de los ciudadanos. La política presenta los principios para el desarrollo de la IA en Colombia y establece recomendaciones entre las cuales se encuentran: diseñar un plan para proveer asistencia técnica para que las entidades de supervisión y vigilancia creen y definan ambientes de prueba regulatorios (tipo sandbox y regulatory beaches) en inteligencia artificial y diseñar un marco ético transversal para guiar el diseño, desarrollo, implementación y evaluación de sistemas de inteligencia artificial que se implementen en el país.

# Focos temáticos

https://minciencias.gov.co/mision_sabios/focos

# Using AI to Support Good Quality Education for All

Prof. Dr. Rafael FERREIRA MELLO

*AI researcher at Cesar School, Brazil*


C.E.S.A.R school

AiBox Lab

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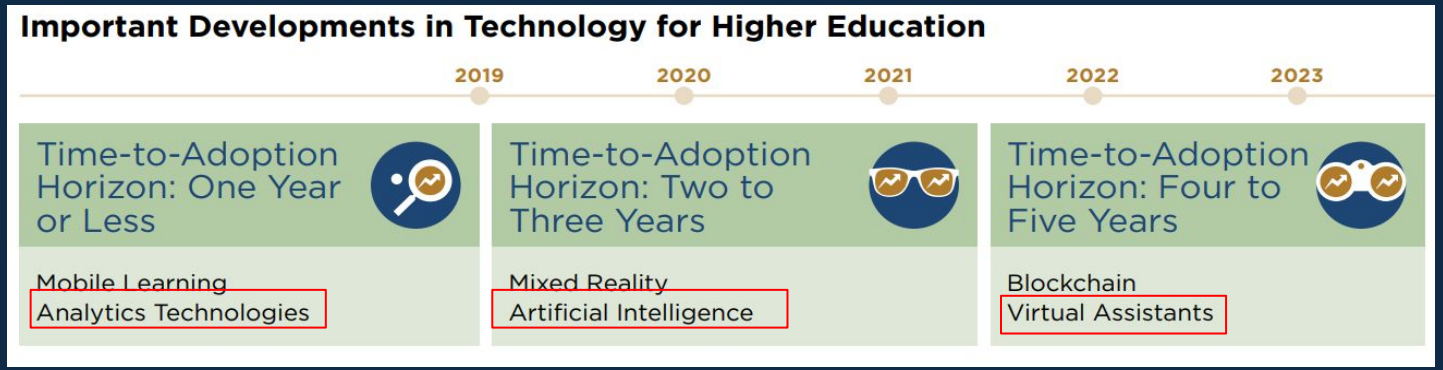
# AI can impact education in many different ways...

Freeman, A., Adams Becker, S. Commins, M., Davis, A., and Hall Giesinger, C. (2017). NMC/CoSN Horizon report: 2017 K-12 Edition. Austin, Texas: The New Media Consortium.




Bryan Alexander, Kevin Ashford-Rowe, Noreen Barajas-Murphy, Gregory Dobbin, Jessica Knott, Mark McCormack, Jeffery Pomerantz, Ryan Seilhamer, and Nicole Weber, EDUCAuSE Horizon Report: 2019 higher education edition

# How to improve the feedback given by teachers, to make it quality, personalized and scalable?

# TUTORIA

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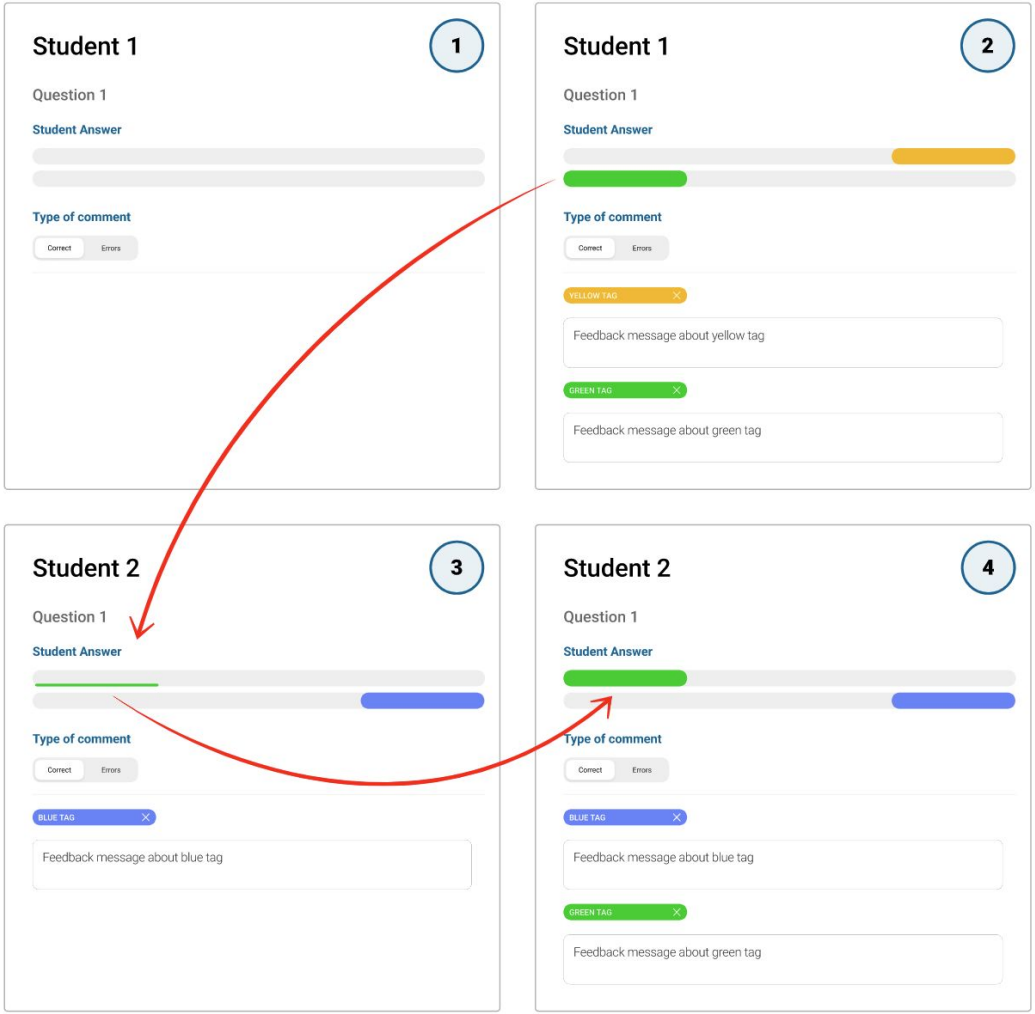
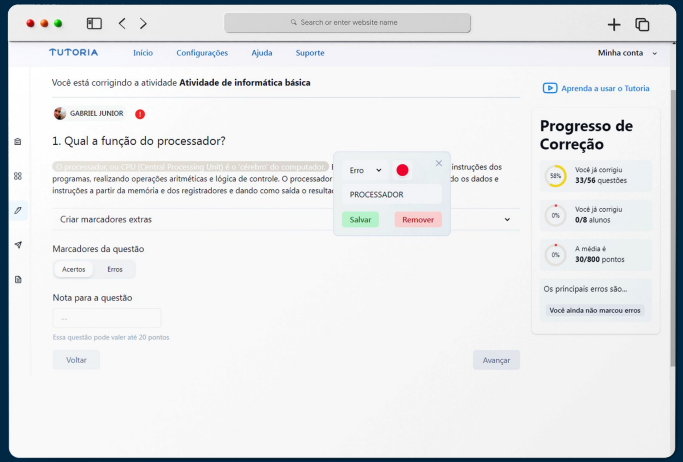
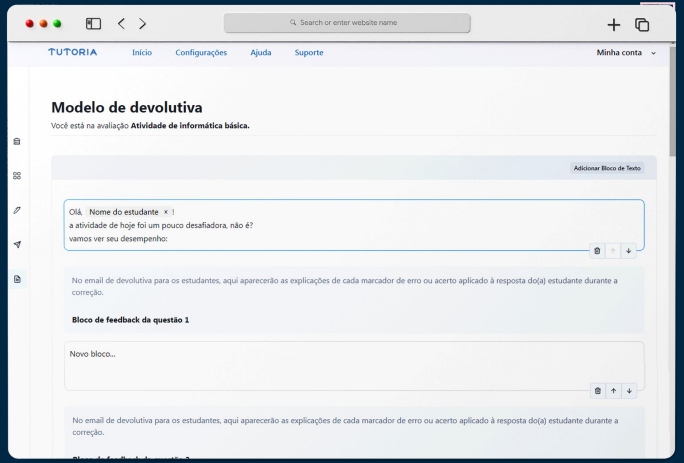
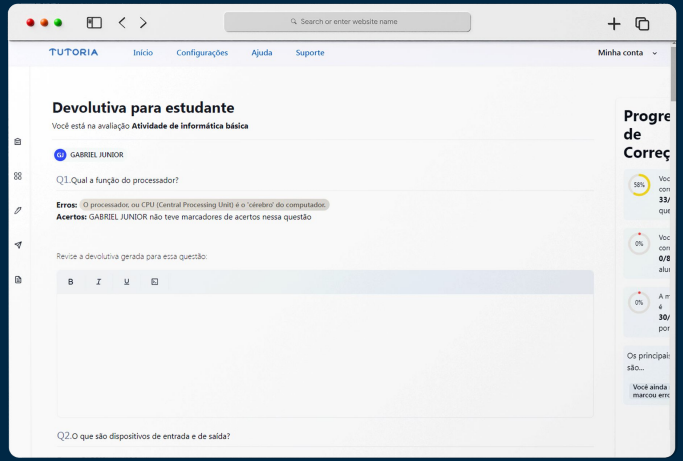
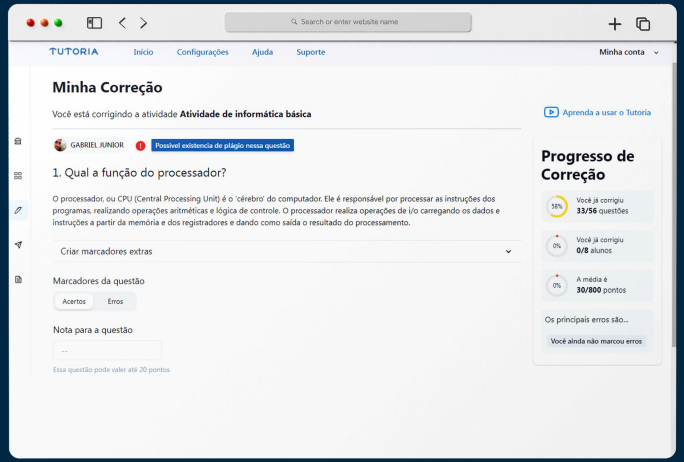

Student 1
1
Question 1
Student Answer
Type of comment
Correct
Errors
Student 1
2
Question 1
Student Answer
Type of comment
Correct
Errors
YELLOW TAG
Feedback message about yellow tag
GREEN TAG
Feedback message about green tag
Student 2
3
Question 1
Student Answer
Type of comment
Correct
Errors
BLUE TAG
Feedback message about blue tag
Student 2
4
Question 1
Student Answer
Type of comment
Correct
Errors
BLUE TAG
Feedback message about blue tag
GREEN TAG
Feedback message about green tag

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# How to ensure good quality education for all?

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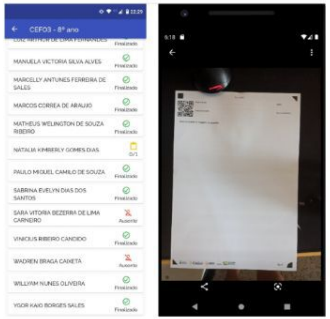
# Unplugged Learning Analytics

## Answer Reference

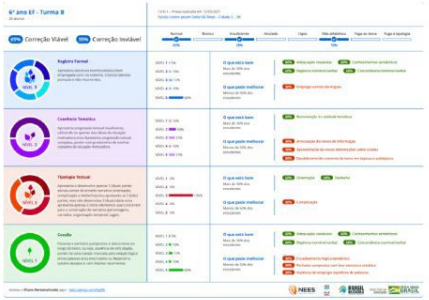
## Mobile app




## Computar Vision

## Natural Language Processing

## Printable Feedback



## Binarization

## Segmentation

## OCR

| Sentence-Based Algorithms | CER | WER |
|---|---|---|
| Google Vision | 0.24 | 0.62 |
| Decoupled Attention Network (pre-trained) | 0.60 | 1.05 |
| Decoupled Attention Network (transfer-learning) | 0.76 | 1.18 |
| Decoupled Attention Network (trained) | 0.77 | 1.22 |
| SimpleHTR (pre-trained) | 0.54 | 0.98 |
| HTR-Flor | 0.32 | 0.72 |
| **Word-Based Algorithms** | **CER** | **WER** |
| AttentionHTR (pre-trained) | 0.44 | 0.71 |
| AttentionHTR (transfer-learning) | 0.44 | 1.27 |
| AttentionHTR (trained) | 0.05 | 0.05 |

# Major Trends of Applied AI in Santiago de los Caballeros

Joel PEÑA

*Rector of T-eco Academy,*
*Dominican Republic*


t-eco group
for a smarter future

DATUM ACADEMY

# Development of exponential technologies in the DR

From the Cybernetic Park of Santo Domingo, we have contributed to the development of exponential technologies, starting in Santo Domingo with the implementation of an international certification by the BID LAB and EON REALITY, with the objective of training 200 young people in first level development in Virtual and Augmented Reality. This program began in 2017 and has been extended; currently to Santiago, as a second location, under the auspices of t-eco group.

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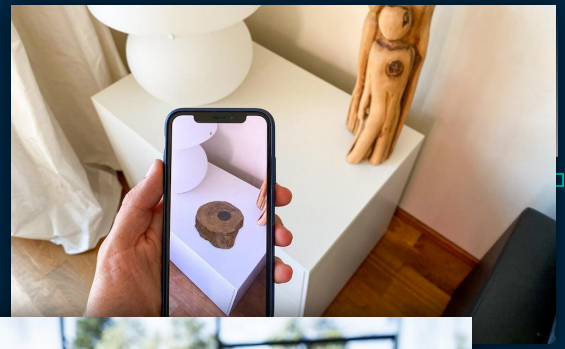
for a smarter future

DATUM ACADEMY

# Development of exponential technologies in the DR

The result can be translated as the creation of theoretical-practical study laboratories; more advanced in the country, mainly conformed by state-of-the-art technology equipment. Such as:

Workspaces that have dual monitors, which enjoy state-of-the-art graphic cards and processors.
Implementation of Agile methodologies for work: SCRUM METHODOLOGY.
Investment in virtual reality helmets (Oculus QUEST 1, 2, RIFT S, GO, Microsoft Hololens, HTC Vive, etc) and tablets for Augmented Reality (IPAD PRO, Samsung Galaxy Tab).



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CASE STUDIES
(POSITIVE DEVELOPMENT IMPACT)

# SANTIAGO DE LOS CABALLEROS, REPÚBLICA DOMINICANA

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# AVR en Santiago De Los Caballeros

Through the alliance of Grupo León Jiménez, AWM Solutions and the Parque Cibernético de Santo Domingo, in February 2021, it has been possible to extend the benefits of technological training to Santiago de los Caballeros.

The first cohort of 80 students trained in the certification of "First Level Developer in Virtual and Augmented Reality" had the presentation of 5 technological projects, developed for companies in Santiago de los Caballeros. Currently, 186 young people are certified.

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# CERTIFICATIONS

In Virtual and Augmented Reality in Dominican Republic

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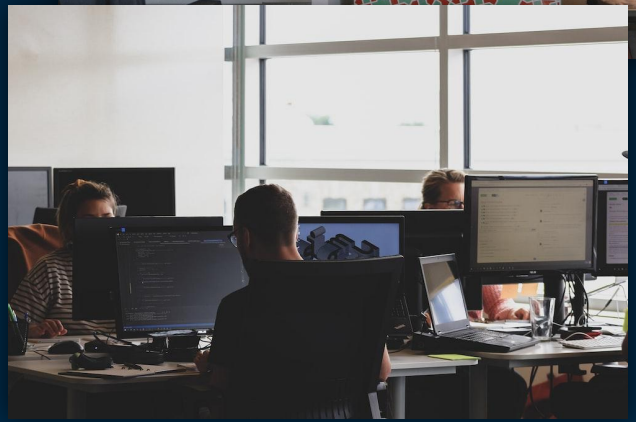
# Philosophy and modules

The certification in First Level Development in Virtual and Augmented Reality is focused on training the student in the areas of: programming, 3d content modeling and graphic interface design.

The program has a duration of 6 months. The first 3 modules include intensive training in the areas mentioned above. After this, the SCRUM phase begins, when the young people choose a specific role (Project Manager, Scrum Master, team leader, developer, modeler, designer) to work on a real client project.



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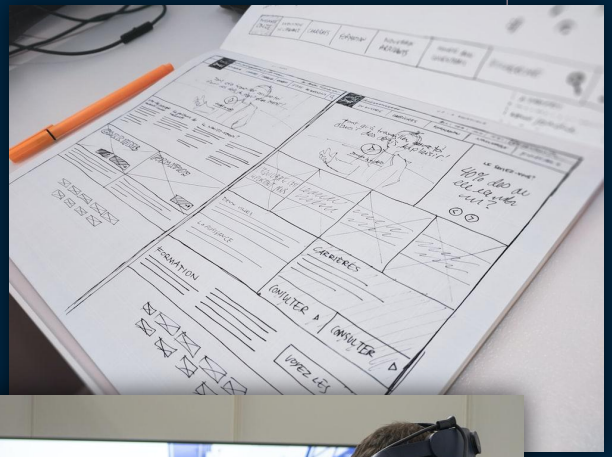
# Project management

The proposal for the implementation of the use of exponential technologies, applied to the services of companies, is interpreted as the dynamism in the way in which users interact with brands and companies.

At the same time, innovation, being referents of technological revolution, thanks to the proposal of projects developed for different clients (La Aurora Cigars, Amber Museum, ITLA). For each project, students are divided into teams, with their assigned roles.



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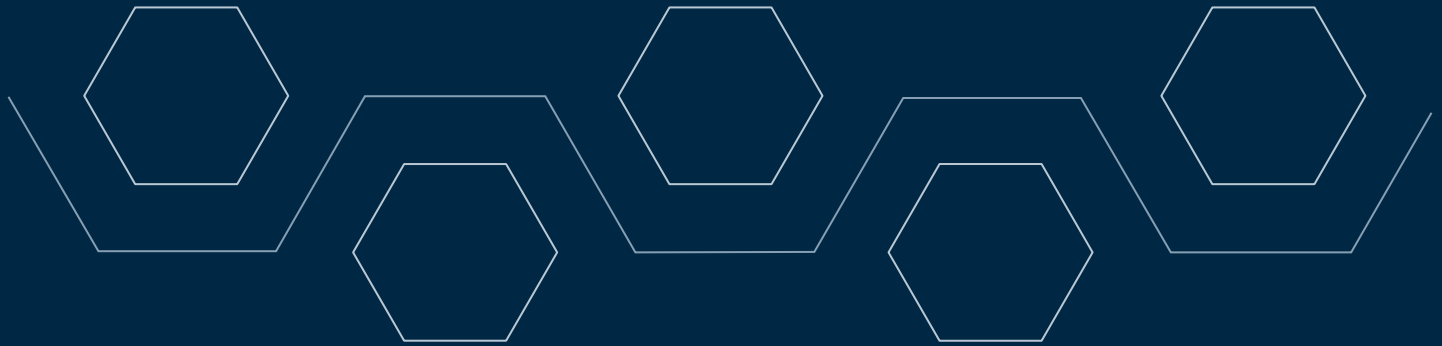
# Projects developed



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# Major Trends of Applied AI in Latin America

Eddy MARTINEZ

*Santo Domingo Cyber Park President, Dominican Republic*

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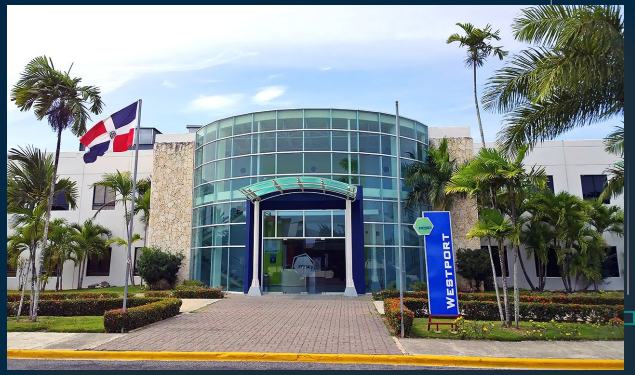
# Cyberpark Of Santo Domingo

It is the first innovation and knowledge center in the Caribbean that responds to the vision of Eddy Martinez, Founding President. This Caribbean "Silicon Valley" is based on a tripod between the educational, business and government sectors through the best talent. For more than ten years, the Santo Domingo Cybernetic Park has been a public-private ecosystem where creative ideas and innovative projects coexist. In this ideal environment for the development of talent, innovation and creativity converge to boost the country's economy and insert the Dominican Republic in the great wheel of the world market.



PCSD Parque Cibernético Santo Domingo

OUR IMPACT

Putting new ICT into practice

**+70k**
High-level professionals

**3 Thousand**
Innovative jobs

DATUM ACADEMY

# PCSD + TECHNOLOGICAL INSTITUTE OF LAS AMÉRICAS

## WE LEARN

The centers of excellence drive the ecosystem through the training of human talent in scientific and technological content. Project-Based Exponential Learning Technologies (PBL)

Institution of higher education that serves as a powerful engine for increasing the country's competitiveness. Today, the ITLA has cutting-edge technology careers such as the career in Artificial Intelligence, where the student will have the ability to model, design and develop intelligent behavior systems, in order to solve real problems and challenges that may arise in your work and professional development, guided by curiosity, passion, integrity, teamwork and continuous improvement.

# Applications of AI in the Dominican Republic

The use of new technologies has helped to improve productivity in the agricultural sector. Especially in the field of coffee, cocoa and tobacco parameterization, which has been developed on three axes:

1) Agricultural robotics
2) Soil and crop monitoring
3) Predictive analysis.

All this is done through the collection of data by means of sensors and their analysis by means of intelligent software.

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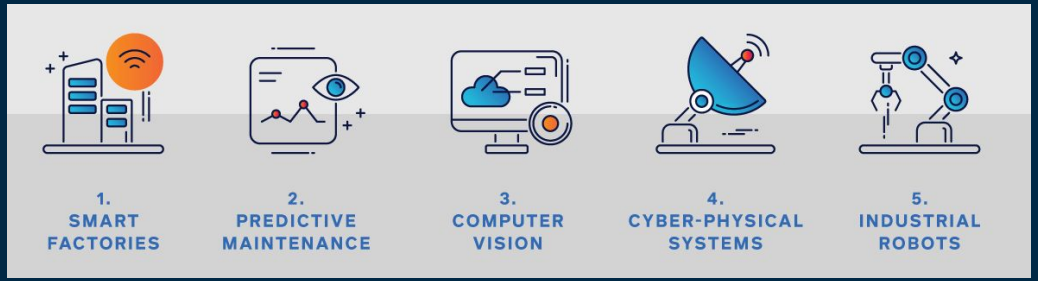
# AI in Industry

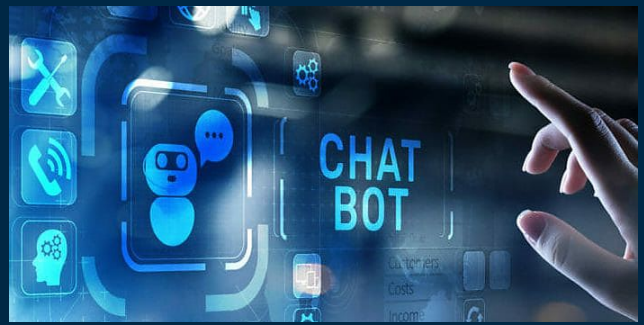



DATUM
ACADEMY

# Services and logistics: Call centers & chat bots

Artificial intelligence (AI) is applicable to customer relationships, as it increases their cognitive and relational capabilities while introducing greater dynamism and adding value to agent interactions.

It maximizes customer-agent synergies and provides a qualitative response to three problems faced by all contact centers: absorbing increased call volumes and extending opening hours, without the need to incorporate additional resources. This streamlines the distribution of incoming call flows with the available resources, without affecting waiting times, the key to customer satisfaction.



# Professional Skills in Applied AI & Big Data at Oracle University

Valérie HAYOTTE

*Oracle Skills Development*
*EMEA Director*

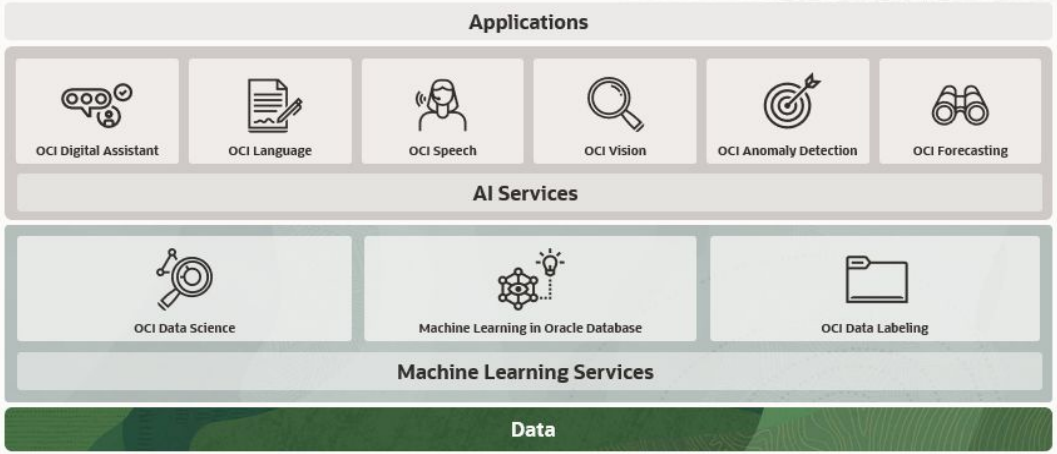
ORACLE University

DATUM ACADEMY

# The work of the Future

# OCI's AI Platforms and Services

Unified AI/ML platform spanning cloud services, apps and data assets

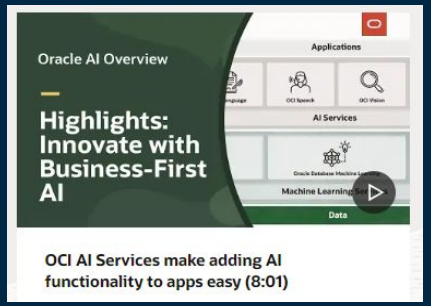



## Artificial Intelligence (AI)

Oracle AI is a family of artificial intelligence and machine learning services. Developers can add prebuilt models to applications and operations. Data scientists can build, train, and deploy models with favorite open source frameworks or choose to benefit from the speed of in-database machine learning.

Try a free AI workshop | Discover Oracle's approach to AI

| | |
|---|---|
| **Artificial intelligence services** | Oracle's AI services provide pretrained models that can be custom trained with an organization's own data to improve model quality, making it easier for developers to adopt and use AI technology. |
| **Machine learning services** | Oracle's machine learning services help data scientists collaboratively build, manage, and deploy machine learning models with favorite open source frameworks or benefit from the speed of in-database machine learning. |
| **AI apps for SaaS services** | Oracle AI Apps help you work more efficiently and effectively through preintegrated, fully functional AI capabilities that surface outputs directly inside the software that supports your key business functions. |




OCI AI Services make adding AI functionality to apps easy (8:01)

# AI Use Cases – Examples

## Industry

### Manufacturing

- Predictive & Condition Based Maintenance
- Demand Forecasting & Inventory Management
- Product Quality Analytics
- Risk Analytics and Safety Improvements
- Revenue Prediction
- Price Optimization
- Sustainability Optimization & Improvements

### Oil & Gas

- Demand Forecasting
- Operational Risk/Environment
- Process Regulations
- Logistics and Operations
- Energy Trading
- Cashflow Mgmt
- Credit Risk Mgmt

### Insurance

- Customer Segmentation
- Cross Sell/Upsell
- Campaign Optimization
- Regulatory Reporting
- Telematics
- Risk Analysis
- Catastrophe Modeling
- Claims Fraud
- Underwriting Fraud

### Automobile

- Predictive Maintenance
- Customer 360
- Dealer Operations and Parts Optimization
- Shared Mobility Services
- Multimodal Transportation
- Warranty Claims
- Loan Monitoring
- Collections
- Consumer Credit Scoring

# AI Use Cases – Examples

## Industry

### Banking

- Risk Management (Fraud/Credit Risk)
- Digital Banking Experience
- Customer Loyalty and Retention
- Macro/Micro Segmentation
- Next Best Offer
- Cross & Upsell
- Profitability and Revenue Forecasting

### Telco & Media

- AI Driven Network Operations
- Marketing and Sales Automation
- Predictive Maintenance
- Offer/Package Personalization and Recommendation
- Customer Value and Experience (Churn, Retention, Loyalty, Segmentation, etc)
- Smart Media Production Planning
- Data monetization

### Healthcare & Public Sector

- Population Health
- Chronic Disease Management
- Clinical Decision Support
- Fraud Prevention
- Payment and Claim Management
- Citizen Analytics
- Improved Public Services/Healthcare-Education-Finance-Transportation-Social Intelligence
- Crime & Cyber Thread Prediction

### Retail

- Personalized Offerings
- Location Based Analytics
- Brand Sentiment Analysis
- Next Best Offer
- Customer Loyalty and Retention
- Segmentation
- Demand Prediction
- Order Picking and Logistic Optimization
- Inventory Management

# AI Use Cases – Examples

## Departmental

### IT

- Active Archive
- ETL Offload
- Log Analytics
- Scale AI/ML
- Extend Data Warehouse
- Streaming Analytics

### HR

- Talent Analytics
- Performance Measurement
- Smarter Hiring Process
- Predicting Future Hiring Needs
- Quality Hiring Factors
- Employee Retention

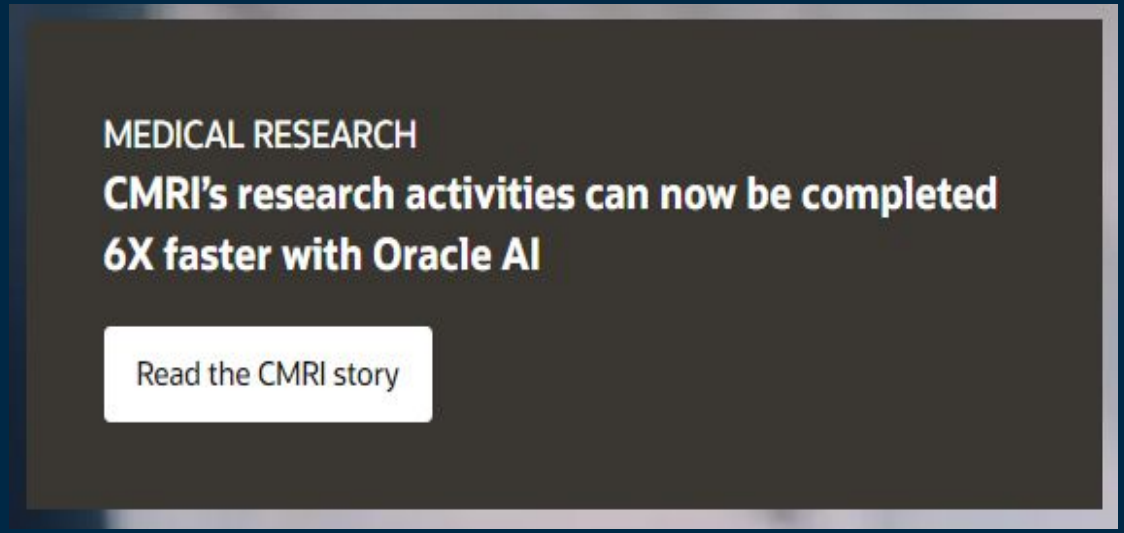
### Marketing

- Customer Acquisition & Retention
- Marketing Automation
- Targeted Offers & Sales
- Next Best Offers
- Audience Segmentation
- Identification
- Evaluation
- Understanding Behavior
- Upsell/Cross Sell

### Finance

- Planning & Forecasting
- Strategic Financial Mgmt.
- Reporting & Financial Closing
- Compliance & Regulation
- Financial Risk Insurance
- Litigation
- Asset Recovery
- Audit Test Automation
- Valuation & Customer Equity
- Reputational Risk

# Few examples – Healthcare



# Few examples – AgriTech

AgriTech startups empower farmers to feed the world and protect the planet

blogs.oracle.com • 5 min read

AgroScout
Detection Done Right

## AgroScout offers sustainable AI agronomy on Oracle Cloud

AgroScout's machine-learning algorithms use Oracle Cloud to analyze drone-captured images of farm fields. By knowing which pests and diseases to treat, growers can save money, improve yields, and feed more people.

Watch the video ▷

Oracle Cloud Infrastructure

“ Robotics and AI, along with cloud computing, are allowing us to do this on a global scale.

Simcha Shore, CEO and Founder, AgroScout

Oracle Cloud Infrastructure

# Master in Computer Science & GRADEO

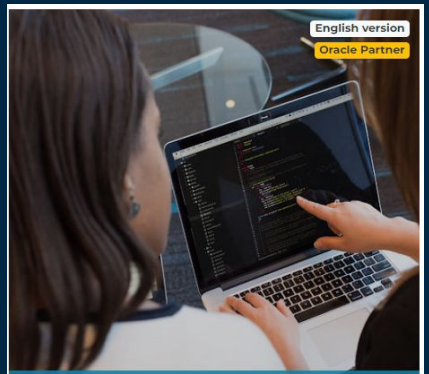
ESTIA INSTITUTE OF TECHNOLOGY

ORACLE University

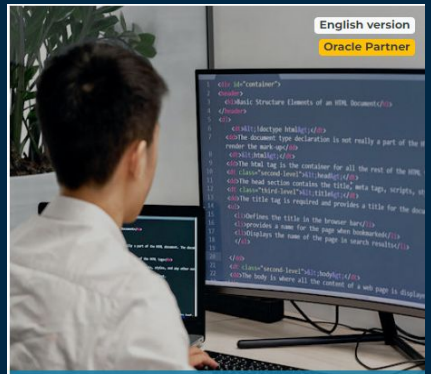
DATUM ACADEMY

e-BIHAR

GRADEO BIG DATA and AI ARCHITECT




GRADEO ADVANCED SQL DEVELOPER




GRADEO FULL-STACK MOBILE WEB DEVELOPER

# Links to Explore and bookmark

- Oracle AI:
  - https://www.oracle.com/artificial-intelligence/
- Oracle BigData:
  - https://www.oracle.com/big-data/
  - https://www.oracle.com/a/ocom/docs/top-22-use-cases-for-big-data.pdf
- Oracle Cloud
  - https://www.oracle.com/cloud/
- **Free learning** from Oracle University:
  - Learning Explorer
  - Oracle Cloud Infrastructure (OCI)

- Meet Oracle AI Innovator Sandesh Rao:
  https://www.youtube.com/watch?v=t6_6mPS1iys

*Sandesh Rao is VP for AIOps and Machine Learning - Autonomous Database. Sandesh explains how he and his team are using AIOps to get insights from a large amount of IT systems to help manage huge IT cloud environments efficiently and intelligently*

# Google Cloud Strategic Vision in Applied AI & Cloud

## Empower every company to transform their business with AI

Merlin YAMSSI

*Lead Solutions Consultant*
*Google Cloud, Partner Engineering*
*USA*


Google Cloud

DATUM ACADEMY

# Google mission statement

Organize the world's information and make it universally accessible and useful

Data

API

Intelligence

# Google Cloud Strategy

**Industry Specific Digital Transformation Solutions**

**Digital Transformation Platform**

**Distributed Infrastructure as a Service**

Google AI

# Google is a world leader in applying AI/ML to real-world situations

**Search**
Search ranking
Speech recognition

**Translate**
Text, graphic and speech translations

**Photos**
Photos search

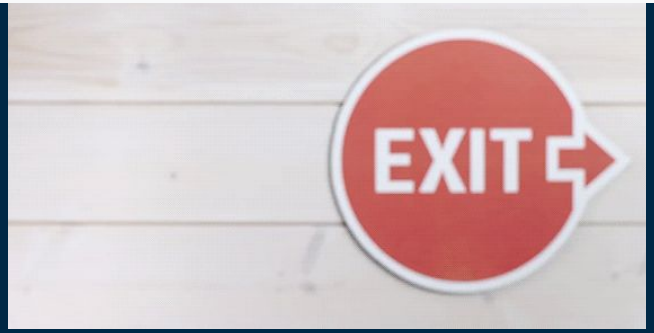
**Gmail**
Smart reply
Spam classification

**Self Driving Car**
10MM miles driven

**Data Center Power Usage**
Reduced cooling energy 40%

**AlphaGo**
First AI to beat a world Go champion (2016)

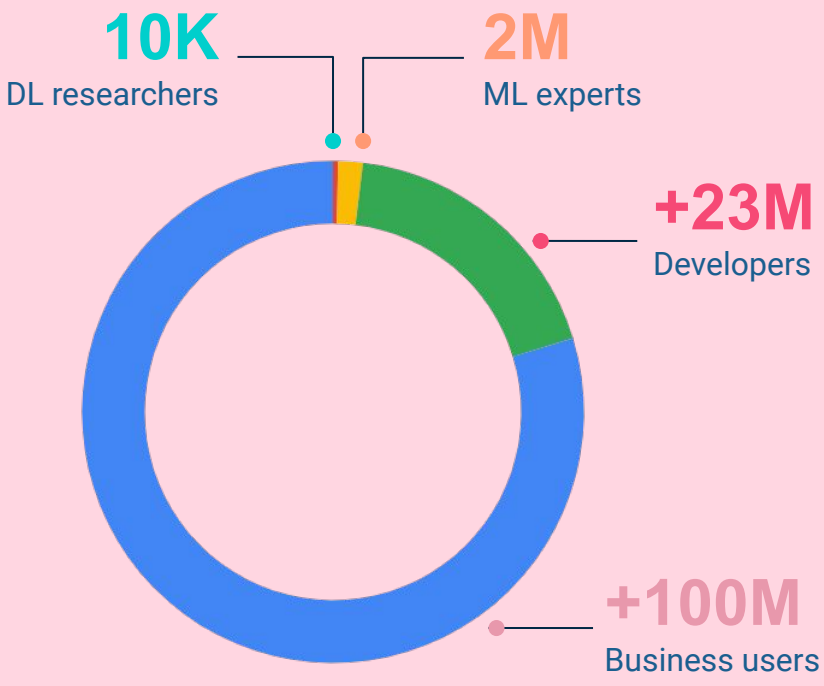
**YouTube**
Video recommendations
Better thumbnails



# Who can actually use AI today?

Very few people can create custom ML models today

**We need to make AI accessible to millions more**



# AI Path

## An AI-First Company Consists of Enthusiasts and Practitioners

### Enthusiasts

*"I want AI education so that I can learn from my colleagues and explain AI to others."*

What is AI? → Mindset → Techniques → Fairness

### Practitioners

*"I want AI education so that I can apply AI to my work / domain."*

AI Crash Course → Working with Data → TensorFlow / TFX → Advanced Topics

# Google's AI Vision

Democratize AI by making it easy, fast, and useful for all experts, developers & users

# AI Democratization Strategy

**What**

**Democratize AI via education.**
Our knowledge is world changing.

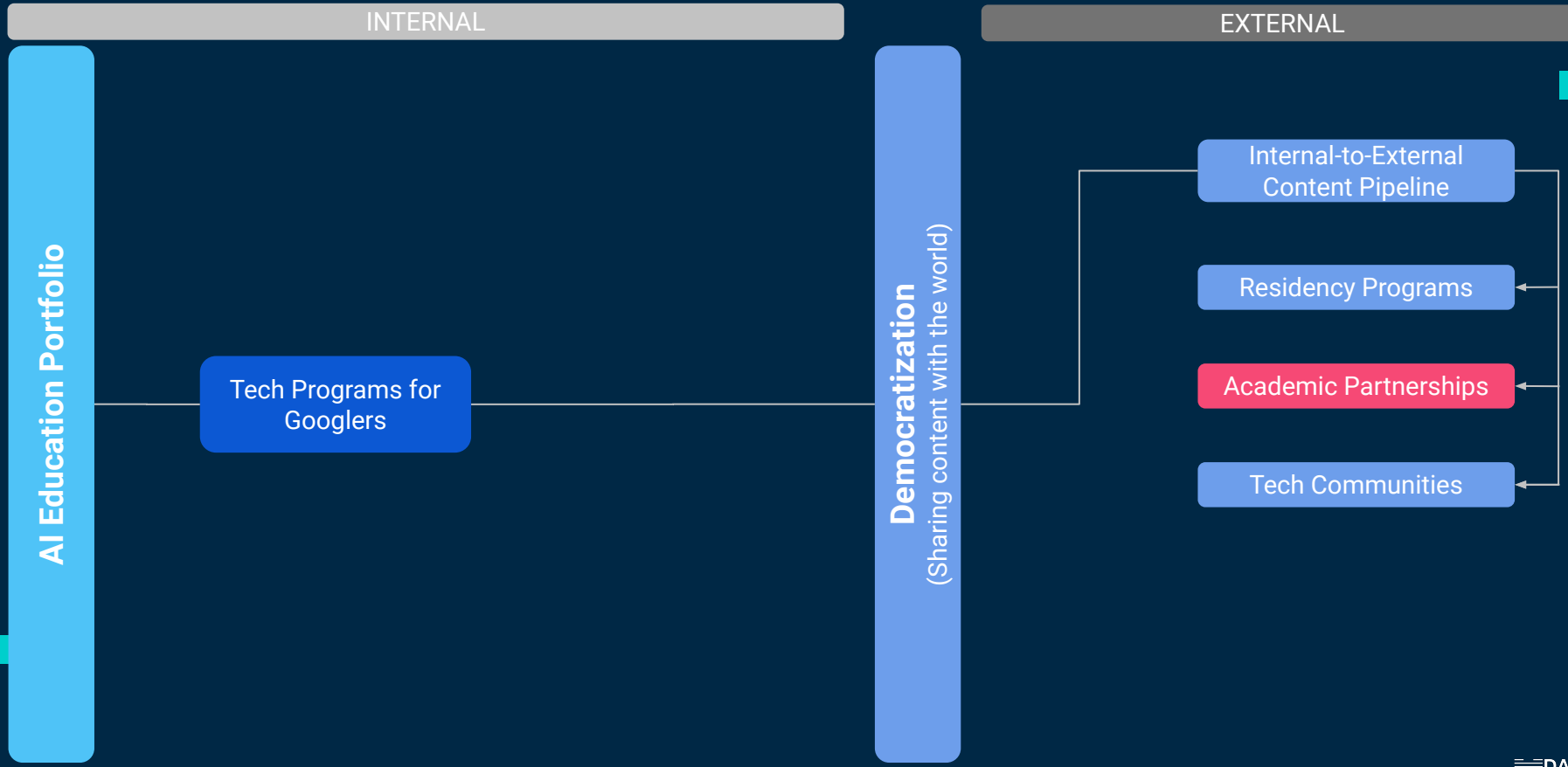
**How**

**Flagship content.**
Insider access to how we upskill engineers.

**Why**

**100x impact of sharing education with the world.**
Reap benefits across industries, not just at Google.

# Democratize AI via education



Grow with Google

# Technology doesn't mean the end of work.

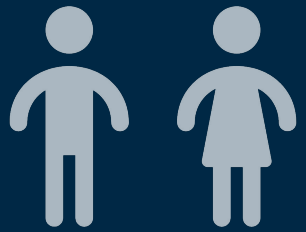


> "It's clear that people need more options to thrive in the digital world. The next generation of workers will depend on how we evolve education and tech in the coming years."

Sunday Pichai, CEO Google
January 2018

Grow with Google

Skills and Jobs



Next Generation

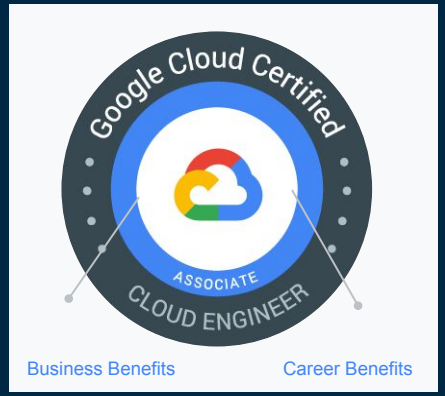
Diversity and Inclusion

# Google Cloud certifications transform businesses and careers

#GrowWithGoogle

The Google Career Certificates are online, professional-level trainings designed to help job-seekers grow in high-growth fields to advance their careers.

Google Certified Professional Cloud Architect is the highest-paying certification for the second year in a row, according to **Forbes**.



Oct. 5th 2021 : Partnership with Google Cloud and new Micromaster/GRADEO on AI IN THE CLOUD

(2 free Google courses within DATUM gradeos)

Google Cloud

DATUM ACADEMY

# Our AI EDTECH proposal around BIHAR /eBIHAR Ms from ESTIA

Pr. Serge MIRANDA

*Scientific Director of MSc BIHAR (ESTIA)*
*President of DATUM ACADEMY*


ESTIA INSTITUTE OF TECHNOLOGY

DATUM ACADEMY

# BIHAR* Master of Science on Big Data & Artificial Intelligence and its GRADEOS – ESTIA School of Engineering (Biarritz, France)–

BIHAR

eBIHAR

* **« BIHAR »** (*Big data Intelligence for Human Augmented Reality* ) means **« TOMORROW »** in Basque Language

ESTIA INSTITUTE OF TECHNOLOGY

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# GENERAL ENGINEERING SCHOOL

# INSTITUTE OF ADVANCED INDUSTRIAL TECHNOLOGIES

Part of the University of Bordeaux

ISAE (National Higher French Institute of Aeronautics and Space) network partner

CTI accreditation

*Conference des Grandes Ecoles* member

ESTIA engineering:

- Mechanical Engineering
- Industrial Engineering
- Electrical engineering
- **Computer Engineering**
  - **BIHAR Master of Science on Big Data and Artificial Intelligence**

ESTIA INSTITUTE OF TECHNOLOGY

DATUM ACADEMY

# BIHAR (and eBIHAR ) Master of Science on big Data & artificial Intelligence

◎ BIHAR: **face-to face MSc** (12- or 18-month program) at ESTIA, Biarritz (France) with **strong international partnerships**

- ◎ Special **AI track** with University of Siena, Italy
- ◎ MOOCs as complementary academic resources
- ◎ Innovation projects in the DATA LAB (POCs on industry USE CASES)
  - COST : 8 K euros (with 50% Estia excellence scholarships for international CDCs)
- ◎ Master 2 started in Sept. 2020 (Master 1 in Sept.2023 along with BACHELOR)
- ◎ International Seminar on AI & BIG DATA (cf DATUM web site)

◎ eBIHAR , MOOC-based version in French and English since 2021 (Master 2) with 90 ECTS

- COST : 7200 Euros
- CONNECTED DIGITAL CAMPUS (CDCs) and their DATA LABS within an international network in the 5 continents

◎ **DATA LAB :** Innovation and Research platform in Big Data & Artificial Intelligence at ESTIA (with ESTIA-TECH support) and in CDC

- ◎ DIGITAL AGRICULTURE, HEALTH, SPORT

DATUM ACADEMY

# Bihar DATA LAB at ESTIA with strong Google initial support

◎ GOOGLE : **2 EXTRA free professional Google courses on Coursera** (in French and English) on DATA CLOUD ARCHITECT and DATA ANALYTICS*

◎ https://www.coursera.org/professional-certificates/google-data-analytics

◎ https://www.coursera.org/professional-certificates/gcp-cloud-architect

◎ 1 BIHAR GOOGLE GRADEO on DATA SCIENTIST in the CLOUD with 1 eBIHAR MOOC (AI) and 1 Google course*

◎ **Summer Google internship on DIGITAL AGRICULTURE in 2022**

** The most successful MOOC on Coursera in 2020 (> 100 000 professional certificates)*

Oct the 5th 2021 at ESTIA
Felix Manoharan Director of Higher Education at GOOGLE CLOUD EMEA with P.Elisalde Director of ESTIA

ESTIA INSTITUTE OF TECHNOLOGY

DATUM ACADEMY

# 4 SKILLS sets with BIHAR MSc leading to JOBS

## DATA ENGINEER & BIG DATA ARCHITECT

- ✓ DATABASE ADMINISTRATOR (SQL & NoSQL)
- ✓ DATA WAREHOUSE & DATA LAKE MANAGER

## DATA SCIENTIST

- ✓ MACHINE LEARNING & DEEP LEARNING
- ✓ ARTIFICIAL INTELLIGENCE ENGINEER

## BIG DATA DEVELOPER

- ✓ WEB APPLICATION DEVELOPER
- ✓ NATIVE MOBILE DEVELOPER AROUND NEW TECHNOLOGIES (NFC, AR, BLOCKCHAIN ...)

CLOUD DATA ARCHITECT (with Google)

# eBIHAR : English Version

| | |
|---|---|
| OBJECT-RELATIONAL DATABASES AND SQL STANDARD | from October 3th to November 11th 2022 |
| ARTIFICIAL INTELLIGENCE (ML & DL) | from October 3th to November 11th 2022 |
| FULL-STACK MOBILE WEB DEVELOPMENT | from October 3th to November 18th 2022 |
| DISTRIBUTED BIG DATA MANAGEMENT | from January 2nd to February 17th 2022 |
| CYBERSECURITY | from January 2nd to February 17th 2022 |
| NFC TOOLS AND AGILE PROJECT MANAGEMENT | from February 20th to March 31th 2022 |
| CLOUD PROGRAMMING | from April 3th to May 26th 2022 |
| MOBILE PROGRAMMING | from April 3th to May 19th 2022 |
| BLOCKCHAIN | from April 3th to May 26th 2022 |

# Oracle mandatory courses

- Machine Learning on Oracle Cloud SLS
- SQL & PL/SQL Fundamentals on Oracle Cloud SLS
- Big Data Fundamentals on Oracle Cloud SLS
- Oracle Database 19c: Administration Workshop on Oracle Cloud SLS

# eBIHAR : French Version

| | |
|---|---|
| Programmation SQL & Relationnel Objet | du 03 Octobre au 11 Novembre 2022 |
| Intelligence Artificielle (Machine Learning & Deep Learning) | du 03 Octobre au 11 Novembre 2022 |
| Développement Mobile Web Full Stack | du 03 Octobre au 18 Novembre 2022 |
| Blockchain | du 28 Novembre au 9 Décembre 2022 |
| Gestion Répartie du Big Data | du 02 Janvier au 10 Février 2023 |
| Cyber Sécurité | du 02 Janvier au 17 Février 2023 |
| NFC | du 20 Février au 31 Mars 2023 |
| Programmation Agile, Dev0ps et Outilsde gestion de Projet | du 20 Février au 17 Mars 2023 |
| Programmation Cloud | du 17 Avril au 26 Mai 2023 |
| Programmation Mobile | du 17 Avril au 12 Mai 2023 |
| Réalité Augmentée et Réalité Virtuelle avec Unity | du 12 Juin au 07 Juillet 2023 |

# Two Google Cloud optional courses

Digital Leader
(CLOUD fundamentals)

Data Analyst

Cloud Architect

ESTIA INSTITUTE OF TECHNOLOGY

DATUM ACADEMY

# 4 KEY differenciating features for MSc BIHAR & eBIHAR

**CURRICULUM BUILT AROUND 4 SKILLS SETS and a DATA LAB**

Leading to highly-demanded jobs
BOTTOM UP approach from JOBS

**STRONG PROFESSIONAL INVOLVEMENT (with certification)**

ORACLE for DATA MANAGEMENT
GOOGLE for DATA ANALYSIS

**STRONG INTERNATIONAL PARTNERSHIP**

University of Siena in Italy on AI,
Network of Connected Digital Campuses (CDC)

**HYBRID LEARNING**

Every course is available off-line in French and English (MOOC) as extra-academic resource (or for flipped classroom)

# Micro-Credentials :

# GRADEO

***Dual Certificates leading to JOBS***

ESTIA INSTITUTE OF TECHNOLOGY

DATUM ACADEMY

# GRADEO : continuous professional development for UP-SKILLING and RE-SKILLING

◎ A growing demand from employers and employees for short programs that provide new skills and focus on the labour market needs.

◎ The European MOOC consortium has defined a common **microcredential** framework to tackle these issues

GRADEO

**100-150 hrs workload 4-6 ECTS**

**Assessment combined with a reliable method of ID verification**

**Level : Bachelor or master**

**Transcript with specification of learning outcomes, hours, level and credits earned**

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# BIHAR GRADEO to meet SKILL demand in Big Data, AI and Application development

**Double certification included :**
**3 or 6 ECTS (CONCEPTS- what?) and**
**PROFESSIONAL Certification (TOOLS- HOW?)**

**DUAL CERTIFICATION LEADING TO JOBS**

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# 3 GRADEOS with Oracle

## ADVANCED SQL PROGRAMMING

✓OBJECT-RELATIONAL DATABASES AND SQL STANDARD

✓ SQL ON ORACLE CLOUD

## BIG DATA & ARTIFICIAL INTELLIGENCE

✓ ARTIFICIAL INTELLIGENCE MLDL

✓ DISTRIBUTED BIG DATA MANAGEMENT

✓ MACHINE LEARNING ON ORACLE CLOUD

## FULL-STACK MOBILE WEB DEVELOPMENT

✓ FULL-STACK MOBILE WEB DEVELOPMENT

✓ JAVASCRIPT & HTML5: DEVELOP WEB APPLICATIONS ON ORACLE CLOUD

# One gradeo with Google (AI /BIG DATA and CLOUD)

## ARTIFICIAL INTELLIGENCE AND BIG DATA ARCHITECT IN THE CLOUD

GRADEO : certificates leading to jobs

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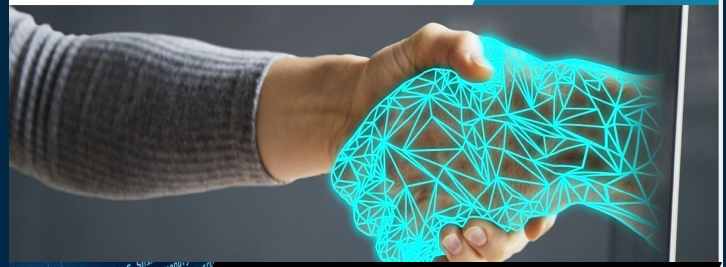

### Google Cloud Courses (Google Cloud Career Readiness Program)

#### INTERMEDIATE SPECIALIZATION COURSE

**Data Analyst specialization**
**16 weeks**

- Mining and preparing your data with BigQuery
- Creating new BigQuery datasets and viewing insights
- Get advanced insights with BigQuery
- Apply machine learning to your data with GCP

**Associate Cloud Engineer Specialization**
**16 weeks (certificate included)**

- Google Cloud Platform Basics: Basic Infrastructure
- Google Cloud Infrastructure Essentials: Foundation
- Google Cloud Core Infrastructure: Core Services
- Google Cloud Elastic Infrastructure: Scaling and automation
- Google Cloud Reliable Infrastructure: Design and process

#### BEGINNER COURSE

**Cloud Digital Leader**
**(certificate included)**

- Introduction to digital transformation with Google Cloud
- Innovating with data and Google Cloud
- Modernising infrastructure and applications with Google Cloud
- Understanding Google Cloud security and operations

COURSE OFFERED TO THOSE WHO DO NOT HAVE THE BASICS IN CLOUD

**Pr. Marco GORI & Stefano MELLACI**
University of Siena (UNISI)
Teachers of Artificial Intelligence

**Pr. Serge MIRANDA**
University Côte d'Azur (UCA) & ESTIA
Big Data Teacher

Information & Enrolment for GRADEO and Master eBIHAR on www.datumacademy.com

## ARTIFICIAL INTELLIGENCE AND BIG DATA ARCHITECT IN THE CLOUD

in partnership with Google Cloud

DURATION: 6 MONTHS
PRICE: 999 €
ENROLMENT : ALL YEAR ROUND
DELIVERING: 6 ECTS & 2 GOOGLE CERTIFICATES*
LEARNING MODE: 100% ONLINE

The AI and Big Data architect must master 3 environments at the heart of this GRADEO :

1. The management of DATA, both structured with pre-definition of a fixed schema (SQL3, OQL), semi-structured with meta data (SparQL) and unstructured (NOSQL, New SQL) as well as the concepts of DATA WAREHOUSE and DATA LAKE.
2. The analysis of DATA with computer methods (Data Mining and OLAP), statistics (Machine learning in supervised or unsupervised mode) or based on AI with the fundamental approach of Deep Learning (multi-layer neural networks)
3. The Cloud which is the future of DATA management and analysis

### Academic courses from ESTIA's Master BIHAR/eBIHAR

**BD2: from databases to Big Data**
**6 weeks**

- BIG DATA paradigms and Codd relational data model for structured data
- Introduction to SQL2, relational SQL
- ChrisDate's third manifesto for hybrid object-relational data models
- Introduction to ODMG
- Introduction to SQL3, object-relational SQL
- NOSQL and NEW SQL for unstructured data

**Artificial Intelligence :**
**Machine Learning & Deep Learning**
**6 weeks**

- Mathematical tools for AI
- The basics of Machine Learning
- The basics of Deep Learning
- Learning with Deep Learning
- Computer vision, natural language
- Software for Machine Learning

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# eBIHAR « CDC » (Connected Digital Campus) : 3 salient features

1) **eLEARNING third-place with LOCAL FACE-to-FACE TUTORING:** MOOC for every BIHAR Course, GRADEOS Hybrid/Hyflex LEARNING of the future

   Broadband Internet room

   Flipped classrooms with MOOCS

   Learning by doing INNOVATION (DATA LAB)

1) **INNOVATION laboratory** : POCs with local industry and Learning by doing

◎ **« DATA LAB » for the country**

◎ INCUBATOR

NOTE : Special popularization FREE MOOC for every african student : « AI BY EXAMPLE » (AI360 Mooc)for every student around 6 USES CASES/POCS)

1) INTERNATIONALIZATION : network of CDCs

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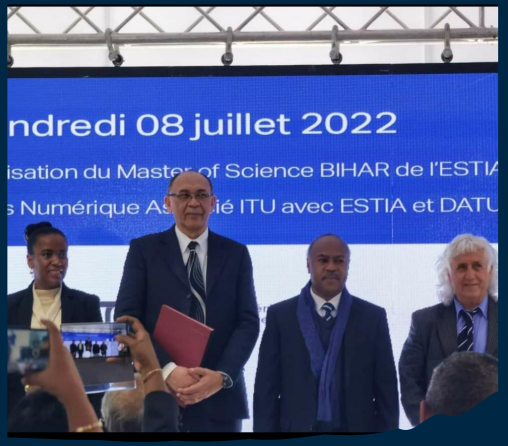
# Signature with AFRIA in 2021 at ESTIA
## (eBIHAR with CDC in French speaking African countries)

With Pr ERic Adja, AFRIA president at ESTIA in June 2021

# Formal opening of the First African Estia/Bihar CDC in Ivory Coast in March 2022

*Le CAN a été inauguré le 29 mars 2022 en présence de l'Ambassadeur de France (Mr Belliard), de deux Ministres de Côte d'Ivoire, Mr ADOM, Ministre Economie Numérique et Telecom et Mr DIAWARA ministre de l'Enseignement Supérieur et de la Recherche avec P.Elisalde Directeur ESTIA et Pr S.Miranda*

# Formal CDC opening in July 2022 in Madagascar (IT UNIVERSITY)



# BIHAR master CDC (Connected digital Campus) and « DATA LAB » (Bihar POCs) towards "ESTIA Bihar institutes'" (on AI Engineering)

Planned network of 30 CDCs in the 5 continents under deployment before 2030 and 4 AI INSTITUTES in the next five years :

2 CDC opened in 2022 in Africa representing **44 eBihar/Bihar master** students in 2022:

- ◎ **ESATIC (Ivory Coast)**
- ◎ **ITU ( Madagascar)**

12 CDCs signed for opening before 2025 with **GRADEO immediate Distribution :**

◎ AFRICA : AFRIA (Benin/ISM), TOGO (IAEC) , SENEGAL (DIT), Cameroon , MOROCCO (ENSET), Algeria, Tunisia, Gabon, Burkina, Senegal (UVS),Nigeria/Cameroon/Dangote's group )

◎ ASIA : CHINA (SRBS) , INDIA (Amrita, Kerala), Vietnam (DANANG), Russia (Astrakhan, Sakkaline)

◎ EUROPE and ME : Northern Cyprus (EMU), Italy (Siena), France (Univ Lyon), Spain (Uni Vigo), Bilbao/DEUSTO, Romania (CLUJ), , BARHAIN

◎ SOUTH AMERICA : Haiti, Dominican Republic, PANAMA, COLOMBIA ,Brasil, Mexico (Yucatan), Guatemala, Costa Rica

◎ OCEANIA : TAHITI (UFP), New Caledonia (UFP)

**DATA LAB:** Smart Car, Smart city, Smart FARMING, DEEP HEALTH, Deep Marketing, Digital circular economy

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# eBIHAR and Adaptive Learning

**BLENDED LEARNING IS A DIMENSION OF HIGHER EDUCATION OF THE FUTURE** (amplified by the covid) towards MULTIVERSITY

◎ «Needs for experiential and adaptive learning

◎ Need to build its CUSTOMIZED track to knowledge (MOOC flexibility) to predict your success : the 3 "P" (Personalization, Prevention, Prediction) < cf PH-D by Sergio Simonian at DATUM>

Our eBIHAR long-term vision : towards the **first AFRICA/ASIA/ME/ LATIN AMERICA Multiversity** in the DATA economy providing

◎ fully European on-line certified degrees (as extra international learning paths) for blended learning

◎ professional degrees (and Gradeos) with industry leaders in

◎ DATA management (Oracle) and

◎ DATA analysis (Google)

◎ DATA processing SKILLS (cf Gradeos) expected by the market both for Computer scientists and managers

◎ A network of international Connected Digital Campuses with in the 5 continents to support this international vision

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# BIHAR MSc and EXPERIENTIAL Learning :

– the **DATA LAB**
– the international Connected Digital Campus (**CDC**)
towards
a click and mortar
**Institute of AI Engineering**
("ESTIA-Bihar" institute) with certified and professional Bachelor and Master in hybrid-learning mode

The power of **LEARNING BY DOING in the 3rd AGE of AI :**

◎ INNOVATION Bihar POCS (Proofs of concepts) in every year of the Bihar curriculum □□ **DATA LAB** **and sustainability and ++**

◎ **TOWARDS a series of GRADEOS in the future on SPECIFIC AI "BY EXAMPLE" (industry, bank, agriculture,..) both for CS and managers**

**built around POCS with the 3 "A" : *Acquire, Adopt, Adapt***

***NEW BM under study :*** *Towards eBIHAR students becoming SUBSCRIBERS for Data Labs POCs and GRADEOS for incremental knowledge upgrade*

◎ Example : « 6 BIHAR USE CASES » in Deep Learning in 2021-2022 for a free popularization MOOC for French students on « AI BY EXAMPLE » *< In France and in each CDC under ANR contract within BIHAR DATA lab>*

***Our eBIHAR proposal in he rise of ADAPTIVE learning, BLENDED LEARNING, EXPERIENTIAL LEARNIN, HYFLEX learning (Hybrid + flexible)***

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# Applications are OPEN for BIHAR Master 2

BIHAR

**The program starts on October on**
**www.jecandidate.estia.fr/**

# Applications are OPEN for eBIHAR MSc and its GRADEOS

eBIHAR

**Both English & French version programs start on October on**
**www.datumacademy.com**

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# THANK YOU

QUESTIONS TIME

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# THE WEBINAR REPLAY WILL BE SENT ON THURSDAY BY EMAIL TO ALL THE PARTICIPANTS WHO REGISTERED

If you are a candidate interested in our programs, please contact us at contact@datum.academy

If you are a company/university interested in a partnership in Latin America with us, please contact constanza.alvarado@datum.academy

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# EXTRA SLIDES

From all speakers

# A strong fundamental couple : « BIG DATA and AI »

## Two major dimensions of (BIG) DATA PROCESSING

DATA MANAGEMENT
DATA ANALYSIS

## Four highly demanded jobs

DATA ENGINEER
DATA SCIENTIST
DATA CLOUD Architect
Big Data Application developer (Web & Mobile)

## Two associated INDUSTRY partnership (for MSc and GRADEOS) :

ORACLE
GOOGLE

ESTIA INSTITUTE OF TECHNOLOGY

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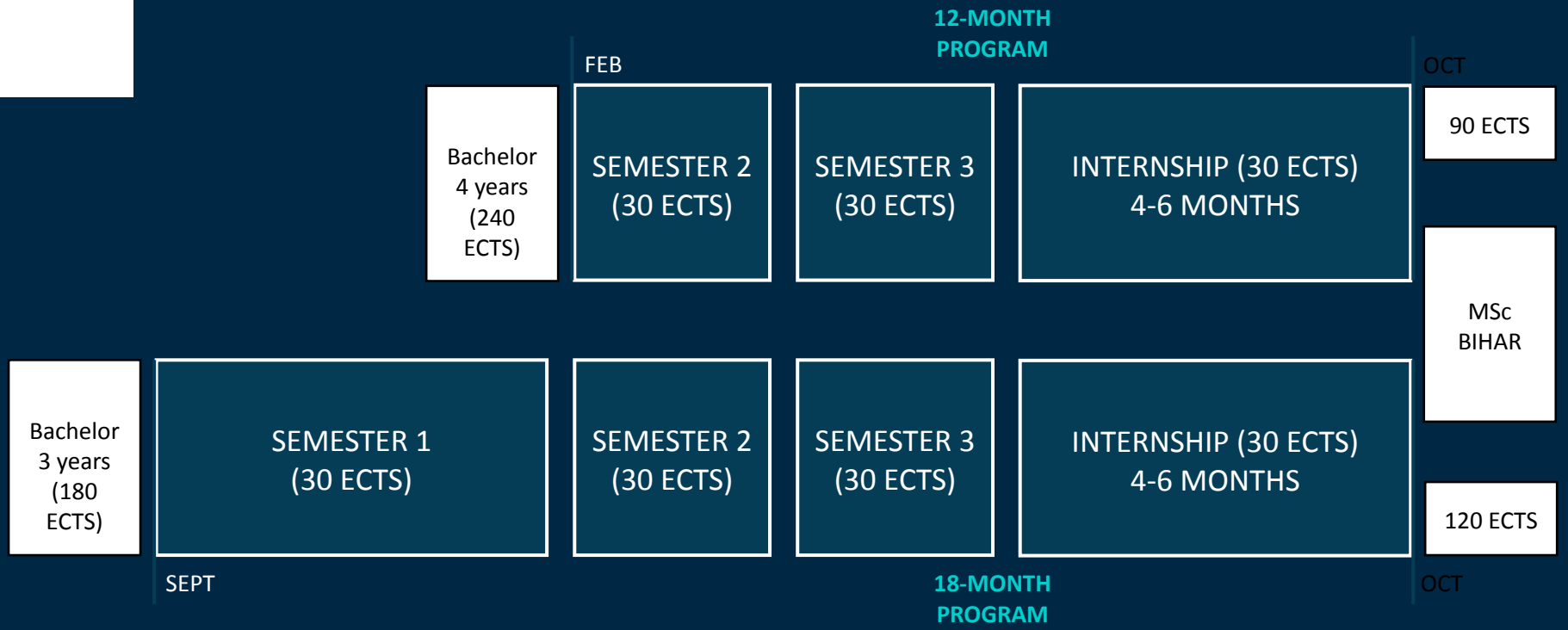
# Job opportunities and bottom-up approach for SKILLS (GRADEO)

| JOB | TOTAL JOB POSTINGS | JOB POSTING REQUESTING SKILLS | PROJECTED GROWTH WITHIN JOB |
|---|---|---|---|
| Software Developer / Engineer | 1,088,223 | 33,395 (3,1%) | 30,7 % |
| Data Scientist | 42,050 | 28,611 (68%) | 19 % |
| Data Engineer | 38,571 | 6,928 (18%) | 11,5 % |
| Data Mining Analyst | 89,573 | 6,257 (7%) | 9,3 % |
| Computer Systems Engineer / Architect | 187,204 | 4,937 (2,6%) | 9,3 % |
| Database Architect | 50,583 | 3,011 (6%) | 9,3 % |
| Business Analyst | 306,954 | 2,448 (0.8%) | 14,3 % |

The BIG DATA market (Oracle):
130,000 engineers needed by 2025 with "an announced shortage" !

# MSc BIHAR : LEARNING PATHS for M2 and M1+M2



# MSc BIHAR : SEMESTER 1 (SEPT-FEB)

- Database fundamentals
- Big Data fundamentals
- Database administration and tuning fundamentals (Oracle)
- Big Data engineering

**Big Data Engineering**

- Web programming fundamentals
- Client-side and server-side JavaScript
- Mobile applications development fundamentals

**Software Development**

**Project design and management**

- Project design, management, and communication

- Data analysis and Artificial Intelligence fundamentals
- Machine Learning fundamentals with R and Python

**Big Data Analytics & Artificial Intelligence**

# MSc BIHAR and eBIHAR : SEMESTERS 2 & 3 (FEB YearN –FEB year N+1)

- Advanced databases
- Distributed big data management
- Cloud computing & Blockchain

**Big Data Engineering**

- Advanced Web and Mobile programming
- VR & AR app development
- Cybersecurity

**Software Engineering**

**Project design and management**

- Agile software development and continuous deployment methods

- Machine Learning and Deep Learning
- Language Processing Technologies

**AI Engineering**

# Extra Slides

Valérie HAYOTTE

*Oracle Skills Development*
*EMEA Director*

# Links to Explore and bookmark

- Oracle AI:
  - https://www.oracle.com/artificial-intelligence/
- Oracle BigData:
  - https://www.oracle.com/big-data/
  - https://www.oracle.com/a/ocom/docs/top-22-use-cases-for-big-data.pdf
- Oracle Cloud
  - https://www.oracle.com/cloud/
- **Free learning** from Oracle University:
  - Learning Explorer
  - Oracle Cloud Infrastructure (OCI)

- Meet Oracle AI Innovator Sandesh Rao:
  https://www.youtube.com/watch?v=t6_6mPS1iys

*Sandesh Rao is VP for AIOps and Machine Learning - Autonomous Database. Sandesh explains how he and his team are using AIOps to get insights from a large amount of IT systems to help manage huge IT cloud environments efficiently and intelligently*

# Extra Slides

Merlin YAMSSI

*Lead Solutions Consultant*
*Google Cloud, Partner Engineering*
*USA*


Google Cloud

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**Merlin Yamssi**
Lead Solution Consultant, Partner Engineering
Google Cloud

*Passionate Innovation Leader |*
*Advisor, Expert, Strategy & GTM | Architecture & Technology |*
*IoT, Intelligent Cloud/Edge, AI/ML, 5G, Web3 & Metaverse*

Google Cloud

- Merlin is an enthusiastic Technology and Architecture visionary with a wealth of experience in co-innovation.
- As Lead Solution Consultant at Google Cloud, Partner Engineering, his primary role is helping companies to drive Digital Transformation leveraging best in class Google Cloud technologies across numerous domains such as Distributed Cloud / Edge Computing, The Internet of Things, Big Data, Smart Analytics, Artificial Intelligence / Machine Learning, 5G, Web3 & Metaverse.
- Before joining Google, Merlin was Chief Innovation Architect at SAP where he led SAP Intelligent Technologies strategy, GTM and Solution Architecture.
- Merlin is a 25+ years veteran in the High Tech industry and also earned a Master degree in Database Management System and in Economics from the University of Nice-Sophia Antipolis in

# What is Applied AI?

In short, applying AI to real world use cases.

The power of AI is undeniable, but applying AI to specific use cases has been difficult for many companies.

Google is releasing solutions and products to allow companies to easily infuse AI into their workflows.

# Academic Partnerships

**PRIMARY AUDIENCE**

FACULTY

SENIOR STUDENTS

FACILITATORS

**GOAL AUDIENCE**

2-4 YEAR STUDENTS

PARTICIPANTS

Selected Faculty and Student Facilitators

Train the Trainer

The Masses