



&



www.hi-paris.fr

Hi! PARIS= IP PARIS + HEC

- **World-class students and exceptional pool of alumni**
 - ✓ Highly selected students at admission
 - ✓ Our schools attract not only the top French students from each generation but also top students worldwide (e.g. > 85% international students in some of our programs ranked #1 worldwide)
 - ✓ 40% of CEOs of CAC 40 companies are alumni of HEC Paris or IP Paris' schools
- **World-class professors in fields ranging from hard sciences to economics, law and management**
 - ✓ Including Nobel prize and ERCs laureates, fellows of Academies of Science, editors of top scientific journals...
 - ✓ Our alliance has allowed the development of multi-disciplinary research, master programs and doctoral studies.
- **Strong eco-system of corporate partnerships, innovation and start-ups**

OBJECTIVES 2025

▪ Breakthrough multidisciplinary research

- ✓ Need for frontier research going from fundamental research on **methods for AI** and data analytics to **business applications** across all sectors and **implications for society**
- ✓ *Our commitment: to hire world-class researchers and increase the production of frontier knowledge on topics essential for the competitiveness of French companies and for our country's sovereignty*

▪ Breakthrough for the French "elite" higher education

- ✓ Exponential growth of data available and AI capability implies a **massive need** in **all sectors of the economy** for graduates with an expertise in **both** (data) science and management
- ✓ *Our commitment: to create and grow joint programs at Master and PhD level and more than double the number of our graduates with a dual expertise AI and data analytics + business*

▪ Breakthrough eco-system for innovation

- ✓ The IP Paris - HEC Paris Alliance is an opportunity: complementary human capital, existing incubation facilities (Station F, Drahi Center) and new services at post-incubation stage
- ✓ *Our commitment: to double in five years the number of AI-related entrepreneurial and intrapreneurial projects we incubate.*

A SHORT HISTORY OF Hi! PARIS



- **Alliance HEC Paris-IP Paris (02-2019)**
 - Co-accredited doctoral school (2019)
- **A multidisciplinary center on AI and Data Analytics for Science, Technology, Business, and Society.**
 - Basic principles agreed 10-2019
 - Governance, scientific animation, hiring of the Scientific Advisory Board, 06-2020
 - Launch event: September 15th, 2020

MAIN OBJECTIVES

- **30 new professors** among the best at the international level over the next 5 years.
- **150 PhD students, 30 postdoctoral students** and **visiting professor programs**
- **Create new research and educational programs** with a unique combination of skill and mindset in science, technology, business and societal issues
- **Double the number of students** in the Master program to reach 500 students in 2025.
- **Increase our incubation and acceleration capabilities** to nurture and attract the best startups.
- **Construct a network** bridging the academic world, the entrepreneurial ecosystem and the business community and economic leaders

FINANCIAL SUPPORT

L'ORÉAL

Capgemini



TOTAL

K E R I N G

REXEL

- To achieve our ambitions and develop **the AI of tomorrow**, the target of **Hi! PARIS is 50 million euros annually**.
- The financial resources are mostly based on **long-term corporate sponsorship** with the objective to raise **France's level of competitiveness** in AI.
- Corporate sponsorship is essential to succeed in the task of making HI! PARIS an **international champion of higher education and research on AI**

KEY RESEARCH CHALLENGES:

Foundations of AI and ML

- **Theory and methods of deep learning:** *high-dimensional probability, neural approximation theory.*
- **Reinforcement learning:** *theory of reinforcement learning, deep reinforcement learning, credit assignment.*
- **Generative models:** *Generative Adversarial Networks (GAN), Variational Autoencoders (VAE)*
- **Optimal transport:** *computational OT, gradient flows, Wasserstein GAN and VAE*
- **Optimization:** *large scale stochastic optimization, distributed algorithms, federated learning, large sample simulation...*
- and also: **explainability** (*interpret the predictions of machine*), **Hybrid AI** (*augmenting humans*), **Ethics and Privacy, Robustness, Natural Language Processing, Web and information retrieval, Structured data** (graphs)

RESEARCH PROGRAM:

AI for Business, Economy and Finance

- **AI and Data for Work:** *Future of work, Digital transformation, Marketing Analytics, New business models and digital entrepreneurship, Job Search analytics...*)
- **AI and Data for Organizations** *(New organizational forms, networks, market structures...)*
- **AI and Data for Finance** *(credit ratings, fintech, cryptocurrency, asset management, economics of information...)*
- **AI and Data for Marketing** *(add targeting, predictive customer service, dynamic pricing, cross-selling...)*
- **Economic and social policy implications of AI & Data** *(inequality, labor markets...)*
- **AI and Data & Law** *(legal tech, privacy, predictive justice...)*

RESEARCH PROGRAM: AI for Society

- **AI for Energy** (*Sustainable ICT, micro-grids, energy efficiency*)
- **AI for Climate Science**
- **AI and Data & ethics** (*Human vs. machine decision, privacy, bias and fairness...*)
- **AI and Data & technology** (*Robotics incl. bio robotics, Human-machine interface systems, Networks: Device to device, performance assessment...*)
- **AI and Data for scientific complex systems** (*Generative models for new material / drugs, high-ene physics,)*
- **AI and Data for Health** (*Health data Analytics, Health and Labor...*)
- **AI and Data & Neuroscience** (*brain imaging, Brain Computer Interface*)

EDUCATION

- **Create a PhD track** to attract the future stars to develop doctoral research at the best international level
- **Develop an environment to raise doctoral education to the highest international standards:** invitation of world class professors, organize thematic semesters, boost the level of our PhD (doctoral courses, etc.)
- **Develop** new Master programs with professional and research focus (AI and finance, AI and environment / social good, mathematical foundations of ML / AI,)
- **Raise the awareness of students to ethical and economical issues of AI**
- **Develop entrepreneurship in AI:** launch a startup program in AI, attract the best start-up

