A Code of Ethics
for Purpose-driven Analytics at scale

Our experience and learning @Nestlé
in the continuum across data, analytics and AI

Nestlé at a glance

- CHF **92.6 billion** in sales in 2019

- Over **2 000** brands

- **1.2 billion** products sold every day

- Products sold in **187** countries

- **300 000** employees

- **403** factories in **84** countries
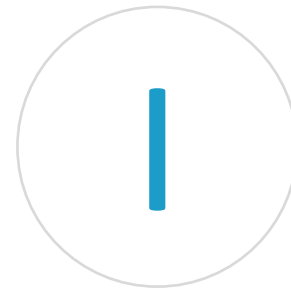
→ **Data + Tech: challenges at scale!**

Information Technology

F.A.I.R. is the foundational framework of our data strategy

F

A

I

R

Findable addresses the need to understand what **existing data assets** are available and their meaning

Accessible provides the means for **retrieving data assets**, while considering **authorization** needs

Interoperable relates to **linking and exchanging data** in a common way and with a common dictionary

Reusable clarifies the **usability of data in a new context** according to its origin, quality and compliance aspects

A data set is a Data Asset if it's F.A.I.R.

Information Technology

Building blocks of our strategy to become a data-enabled cognitive enterprise

E2E Analytics portfolio management: value-driven & values-inspired

...for each business

PRODUCTS & SERVICES
Digital solutions engineered to scale

Analytics & Machine Learning

F.A.I.R. Data Assets

Data & Integration Platforms

AI Code of Ethics
An Integral part of Nestlé's culture

RESPECT FOR **OURSELVES**

RESPECT FOR **OTHERS**

RESPECT FOR **DIVERSITY**

RESPECT FOR **THE FUTURE**

TALENT & CULTURE
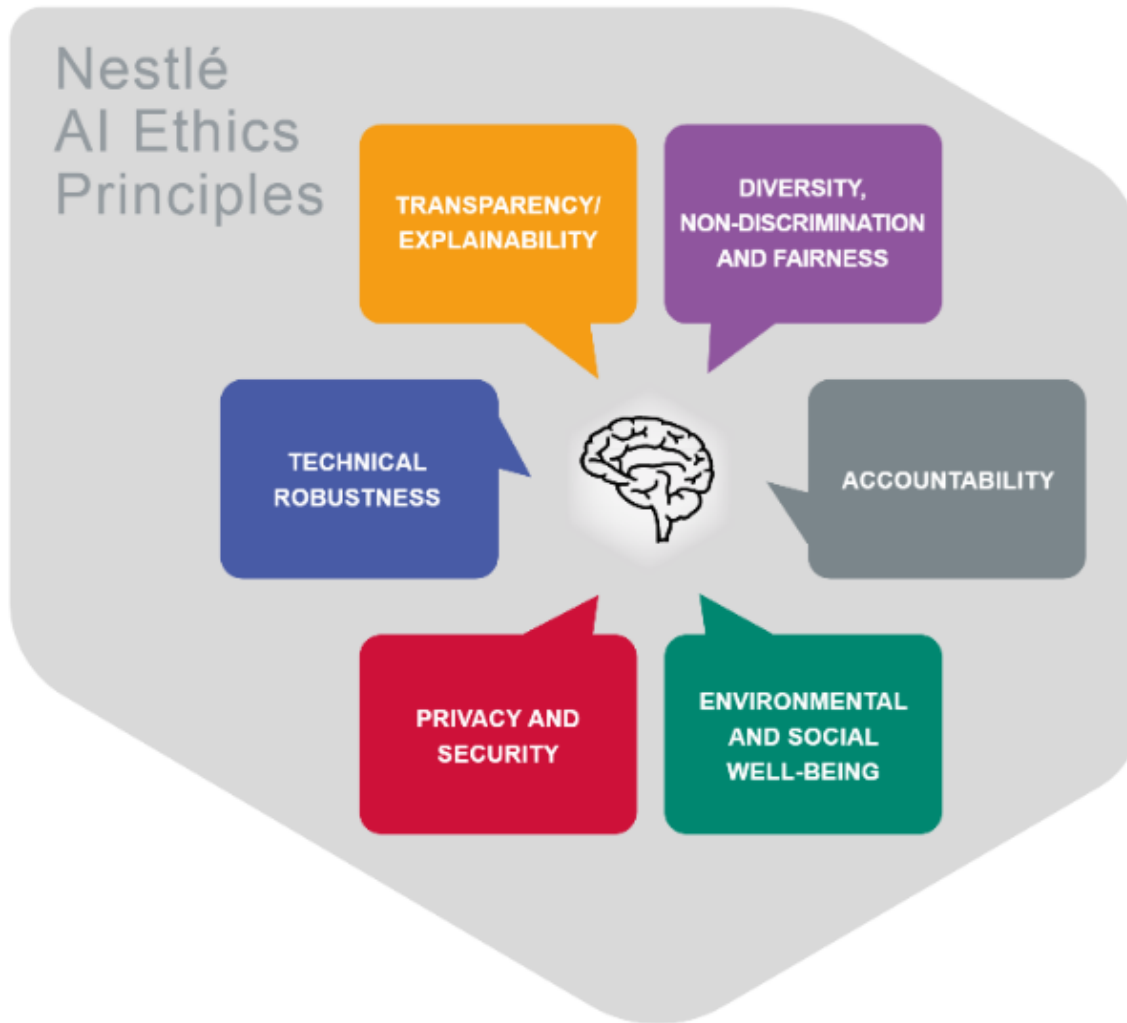Data as part of the DNA of our decisions and skills

Data Science & Analytics Talent Development

Data Citizens Community

Data Culture Evangelization

A VALUES-BASED APPROACH TO AI ETHICS

These principles are interconnected and mutually beneficial.

They are rooted in Nestlé's culture of integrity, and in particular its approach to ethical business

They are now part of the Business Principles at corporate level

ENVIRONMENTAL & SOCIAL WELLBEING

Sustainability Operating System

Tech & Data for Good vision to bring superior data, technology and digital capabilities that enable Nestlé Sustainability goals

Focus Areas

-- REDUCE REUSE RECYCLE --

- **Drive circular principles** via our systems.(Design, Sourcing, Manufacturing tbc)

- Automate actionable **packaging reporting.**

- Activate data sharing with **partners** to boost recycling.

- **Nudge consumer behaviors** using eComm, Digital, Mobile, AR/VR

----- CLIMATE PLEDGE -----

- Automate actionable **carbon reporting** - that drives reduction.

- Enable **future simulation and scenario planning.**

- Use AI to **optimize the value chain** and increase resilience.

- **Inform recipe management** by embedding carbon emission data.

---- IT FOR GOOD -----

- **Improve environmental impact of IT** (CO2, eWaste, Energy, Travel)

- Establish **IT innovation ecosystem** to crowdsource, develop and accelerate solutions.

-------- **Sustainability Data Fabric** -------

Farm to Fork Supply Chain Transparency

Focuses on:
- Incorporating human and global environmental wellbeing
- Encouraging sustainability and ecological responsibility

TRANSPARENCY/ EXPLAINABILITY

- A **linear function** to be maximized

  e.g. $f(x_1, x_2) = c_1 x_1 + c_2 x_2$ → **Eg. Revenue, Engagement, …**

- **Problem constraints** of the following form

  e.g.

  $$a_{11}x_1 + a_{12}x_2 \leq b_1$$
  $$a_{21}x_1 + a_{22}x_2 \leq b_2$$
  $$a_{31}x_1 + a_{32}x_2 \leq b_3$$

  → **Make sure your intentions are modeled here!**
  - Max CO2 emissions
  - Max Screen Time per individual
  - Max Consumption of specific ingredients

- **Non-negative variables**

  e.g.

  $$x_1 \geq 0$$
  $$x_2 \geq 0$$

  → **Eg. a video duration cannot be negative**

Focuses on:
- Transparency of decision-making and rationale
- Transparency of data, system, and business model

DIVERSITY, NON-DISCRIMINATION & FAIRNESS

GUIDANCE & CHECKS AGAINST BIAS

Ethics question	Dataset reviews	Final model measuring

Considerations:

- Trust
- Do the right thing
- Business results via D&I

Focuses on:
- Avoiding discrimination based on class, color, creed, religion, gender, or sexual orientation
- Ensuring equal access through inclusive design

PRIVACY & SECURITY

With a strong focus on legal compliance and consumer privacy protection, we can aim to provide personalized services and engagement

Focuses on:
- Legal compliance
- Technical compliance of data
- Data governance

ACCOUNTABILITY & TECHNICAL ROBUSTNESS

Data for Good ⇔ Talent for Good

Focuses on:
- Liability/answerability for decision-making
- Dedication to Improvement and Continued Innovation

Learnings

- Tackle ethics principle early in your data/AI journey, strongly linked to company purpose

- Strong foundation like F.A.I.R. for your data strategy

- Think about up-skilling/re-skilling of workforce. Domain expertise is key

- Demystify/break down complexity

Information Technology