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

**F**nfindable addresses the need to understand what **existing data assets** are available and their meaning.

**A**ccessible provides the means for **retrieving data assets**, while considering **authorization** needs.

**I**nteroperable relates to linking and exchanging **data** in a common way and with a common dictionary.

**R**eusable 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.
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

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

- Data Science & Analytics
- Talent Development
- Data Citizens
- Community
- Data Culture
- Evangelization

**AI Code of Ethics**
An Integral part of Nestlé’s culture

- Respect for Ourselves
- Respect for Others
- Respect for Diversity
- Respect for the Future
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

<table>
<thead>
<tr>
<th>Focus Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REDUCE REUSE RECYCLE</strong></td>
</tr>
<tr>
<td>- Drive circular principles via our systems (Design, Sourcing, Manufacturing etc)</td>
</tr>
<tr>
<td>- Automaete actionable packaging reporting.</td>
</tr>
<tr>
<td>- Activate data sharing with partners to boost recycling.</td>
</tr>
<tr>
<td>- Nudge consumer behaviors using eComm, Digital, Mobile, AR/VR</td>
</tr>
<tr>
<td><strong>CLIMATE PLEDGE</strong></td>
</tr>
<tr>
<td>- Automate actionable carbon reporting - that drives reduction.</td>
</tr>
<tr>
<td>- Enable future simulation and scenario planning.</td>
</tr>
<tr>
<td>- Use AI to optimize the value chain and increase resilience.</td>
</tr>
<tr>
<td>- Inform recipe management by embedding carbon emission data.</td>
</tr>
<tr>
<td><strong>IT FOR GOOD</strong></td>
</tr>
<tr>
<td>- Improve environmental impact of IT (CO2, eWaste, Energy, Travel)</td>
</tr>
<tr>
<td>- Establish IT innovation ecosystem to crowdsource, develop and accelerate solutions.</td>
</tr>
</tbody>
</table>

| Sustainability Data Fabric |
| Farm to Fork Supply Chain Transparency |

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

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

- A linear function to be maximized
  \[ f(x_1, x_2) = c_1 x_1 + c_2 x_2 \]
  Eg. Revenue, Engagement, ...

- Problem constraints of the following form

  \[
  \begin{align*}
  a_{11} x_1 + a_{12} x_2 & \leq b_1 \\
  a_{21} x_1 + a_{22} x_2 & \leq b_2 \\
  a_{31} x_1 + a_{32} x_2 & \leq b_3
  \end{align*}
  \]

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

- Non-negative variables

  \[
  \begin{align*}
  x_1 & \geq 0 \\
  x_2 & \geq 0
  \end{align*}
  \]

  Eg. a video duration cannot be negative
DIVERSITY, NON-DISCRIMINATION & FAIRNESS

Guidance & Checks Against Bias

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