



I N S E A





2

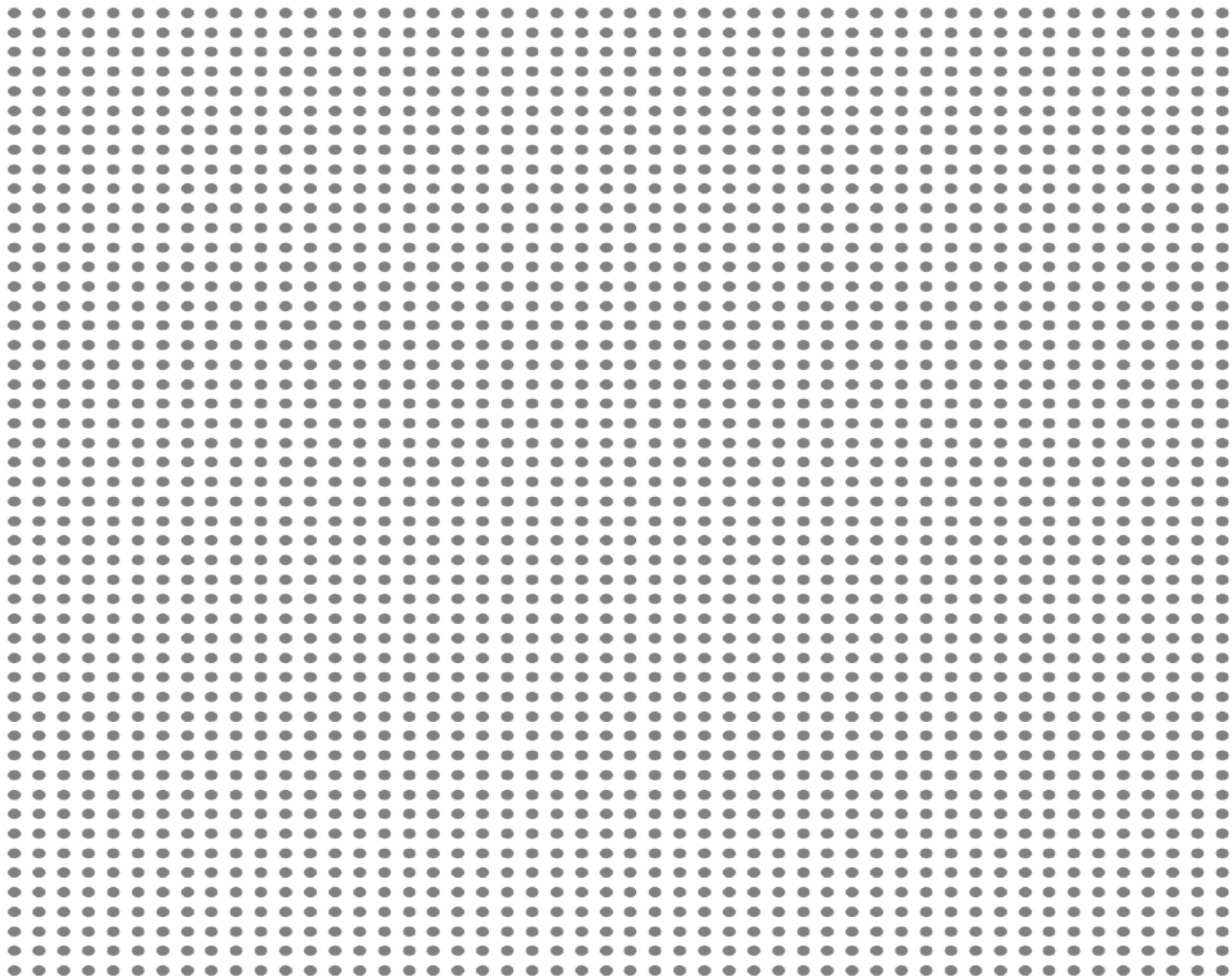
3

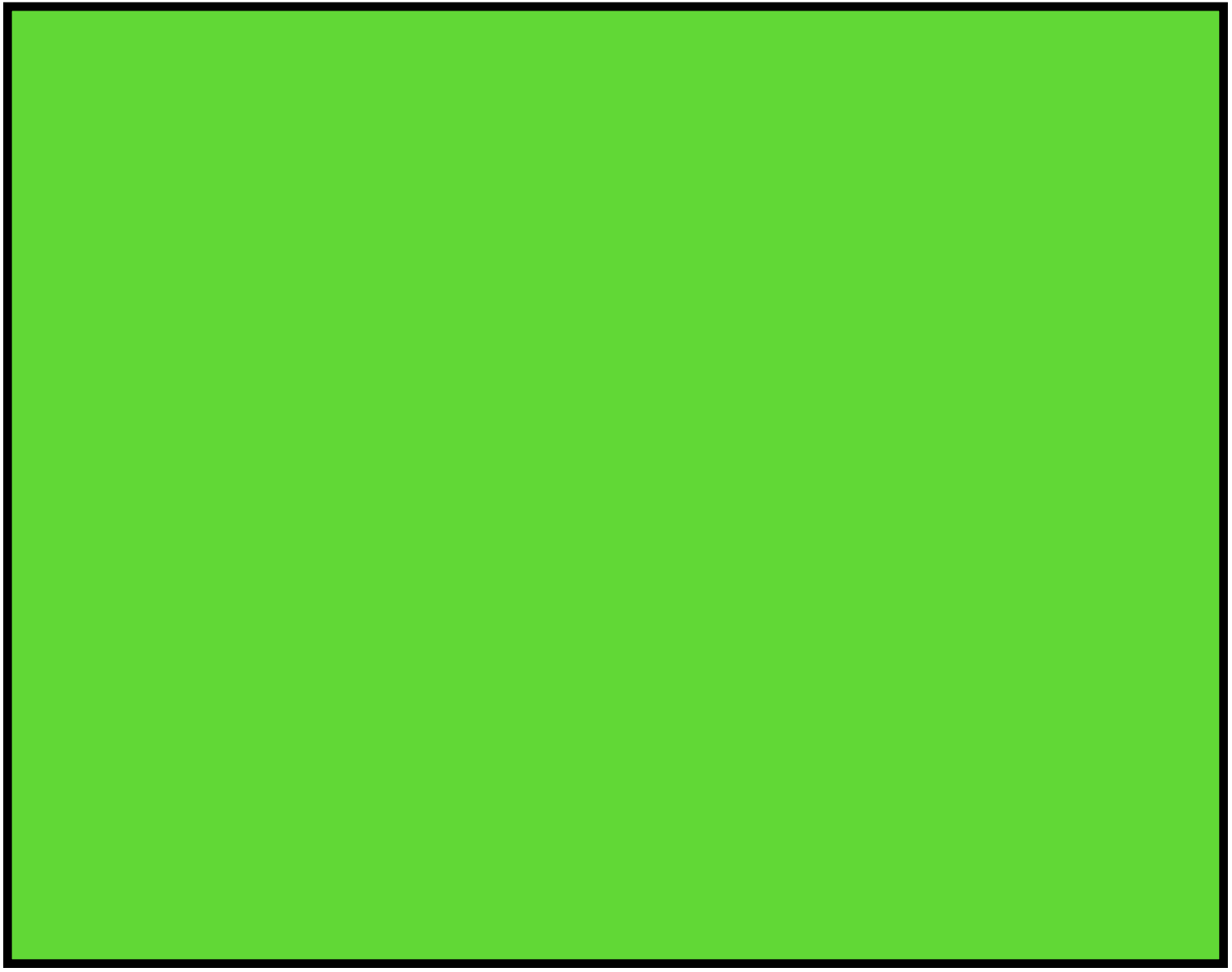
Notivatiön

Nous cherchons la probabilité d'être un

génie parmi les tests positifs :

Bayes application





$$99\% / 99 = 0$$

10% | OG = 1



5%

$T = 1$

100%

95%

$T = 1$

95%

$T = 0$

5%

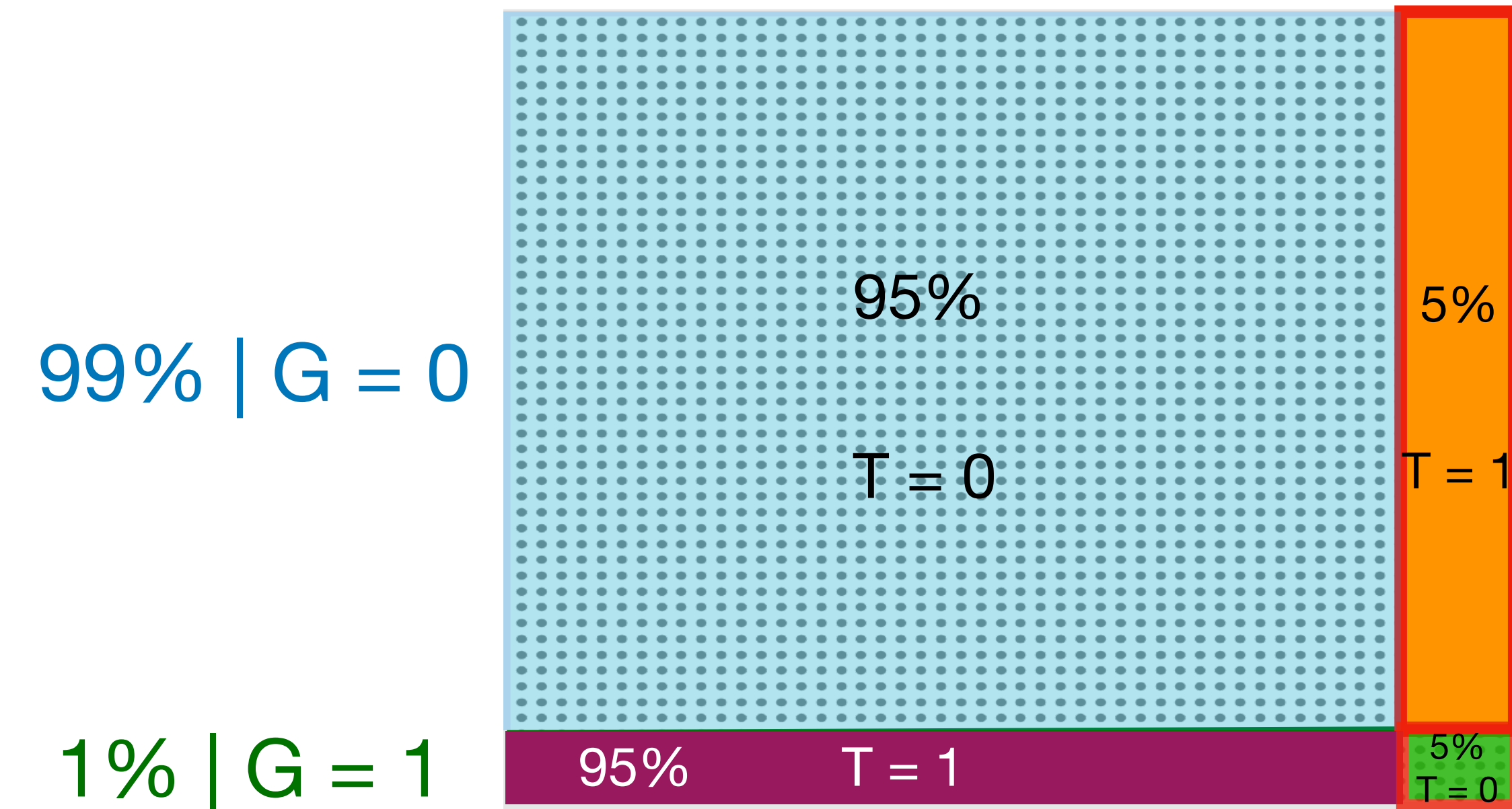
T = 0



$$= \frac{0.01 \times 0.95}{0.99 \times 0.05 + 0.01 \times 0.95} \approx 0.161$$

Formellement, avec Bayes + Probabilités totales:

$$\mathbb{P}(G = 1 | T = 1) = \frac{\mathbb{P}(T = 1 | G = 1) \mathbb{P}(G = 1)}{\mathbb{P}(T = 1)} = \frac{\mathbb{P}(T = 1 | G = 1) \mathbb{P}(G = 1)}{\mathbb{P}(T = 1 | G = 1) \mathbb{P}(G = 1) + \mathbb{P}(T = 1 | G = 0) \mathbb{P}(G = 0)}$$



Nous cherchons la probabilité d'être un **génieur** parmi les **tests positifs** :

$$\frac{\text{Orange square} + \text{Purple square}}{\text{Orange square} + \text{Purple square}} = \frac{0.01 \times 0.95}{0.99 \times 0.05 + 0.01 \times 0.95} \approx 0.161$$

Formellement, avec Bayes + Probabilités totales:

$$\mathbb{P}(G = 1|T = 1) = \frac{\mathbb{P}(T = 1|G = 1)\mathbb{P}(G = 1)}{\mathbb{P}(T = 1)} = \frac{\mathbb{P}(T = 1|G = 1)\mathbb{P}(G = 1)}{\mathbb{P}(T = 1|G = 1)\mathbb{P}(G = 1) + \mathbb{P}(T = 1|G = 0)\mathbb{P}(G = 0)}$$

1. Introduction

2. Les Bayésiens vs Les fréquentistes

3. Rappels de probabilités (exemples)

4. Loi a posteriori et modèles conjugués

5. Estimateur de Bayes



