Importancia del acceso a datos en la ciencia

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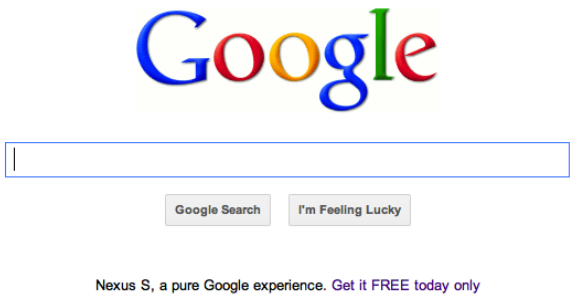
De acuerdo con nuestros colegas canadienses...

50,000,000 artículos publicados hasta 2009

cada año en promedio se agregan 2,500,000

Existen herramientas para hojear publicaciones

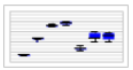
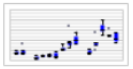
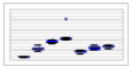
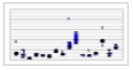
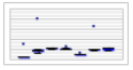


Pero imaginemos

X Condiciones X Metabolito + Unificar mediciones

Para esto utilizamos un enfoque programático

Bases de datos

Name	Organism	Factor	Heatmap	Box plot	Variance	Anova F score
Mining for metabolic responses to long-term salt stress: a case study on the model legume Lotus japonicus (C)	Lotus	Salt			727.45	148.99
Metabolomic responses to long-term salt stress in related Lotus species (A)	Lotus	Germplasm, Salt			496.89	44.10
Metabolomic responses to long-term salt stress in related Lotus species (C)	Lotus	Germplasm, Salt			547.49	34.23
Mining for metabolic responses to long-term salt stress: a case study on the model legume Lotus japonicus (A)	Lotus	Salt			284.76	32.07
Metabolomic responses to long-term salt stress in related Lotus species (B)	Lotus	Germplasm, Salt			291.67	15.23
Mining for metabolic responses to long-term salt stress: a case study on the model legume Lotus japonicus (B)	Lotus	Salt			262.27	2.14

6 quantitative metabolite profile(s)

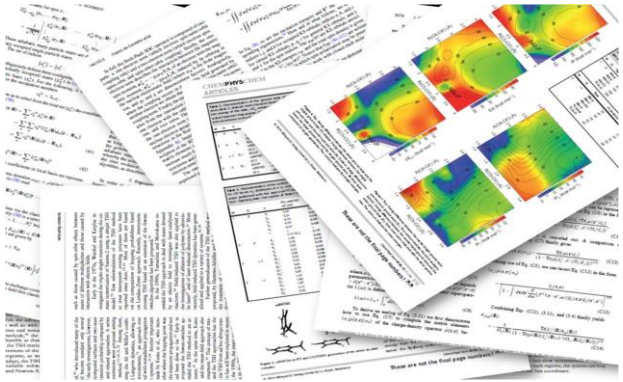
API (Application Programming Interface)

JSON

```
parse_response({
  "code": "/api/status/ok",
  "result": [
    {
      "id": "/topic/en/edinburgh",
      "key": [
        {
          "namespace": "/wikipedia/en_id",
          "value": "9602"
        }
      ]
    }
  ],
  "status": "200 OK",
  "transaction_id":
"cache;cache02.p01.sjc1:8101;2011-10-07T15:51:49Z;0019"
})
```

```
▼<ArrayOfBlog xmlns:i="http://www.w3.org/2001/XMLSchema-instance'
  ▼<Blog>
      <Id>1</Id>
      <Name>C-SharpCorner</Name>
      <Url>http://www.c-sharpcorner.com/</Url>
    </Blog>
  ▼<Blog>
      <Id>2</Id>
      <Name>CodeProject</Name>
      <Url>http://www.codeproject.com</Url>
    </Blog>
  ▼<Blog>
      <Id>3</Id>
      <Name>StackOverflow</Name>
      <Url>http://stackoverflow.com/</Url>
    </Blog>
</ArrayOfBlog>
```

Programa

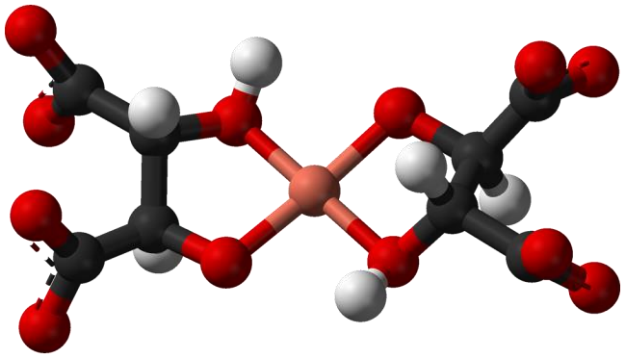


Un ejemplo en reposicionamiento de fármacos

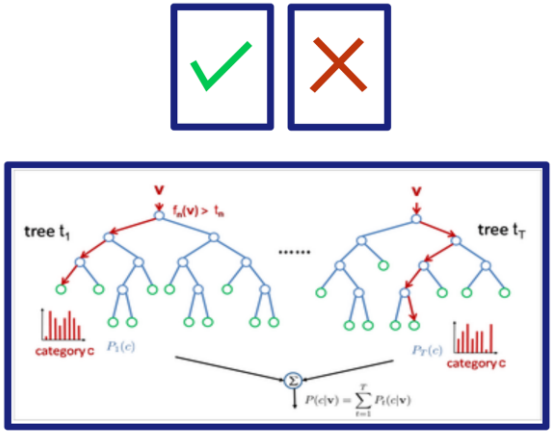
Human alpha defensin 1

Human beta defensin 1

Human cathelicidin LL-37



Generamos un modelo con Machine Learning

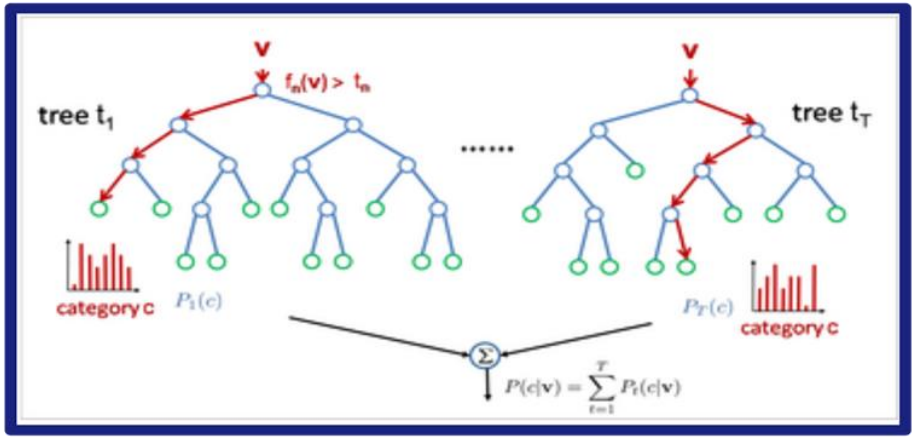


Antimicrobiano

No Antimicrobiano

Utilizamos fármacos aprobados sobre el modelo

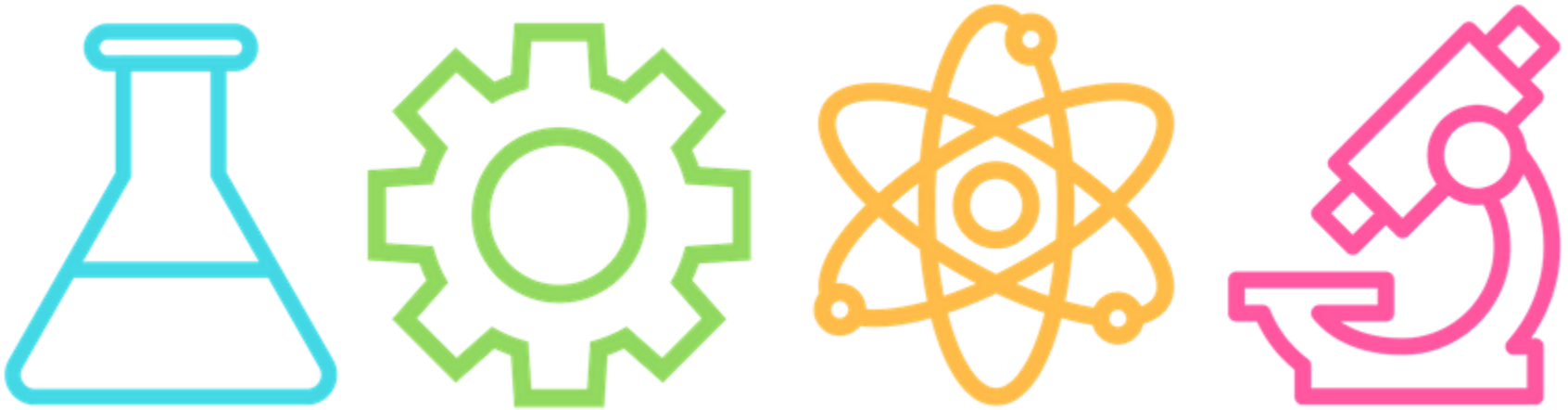
FDA



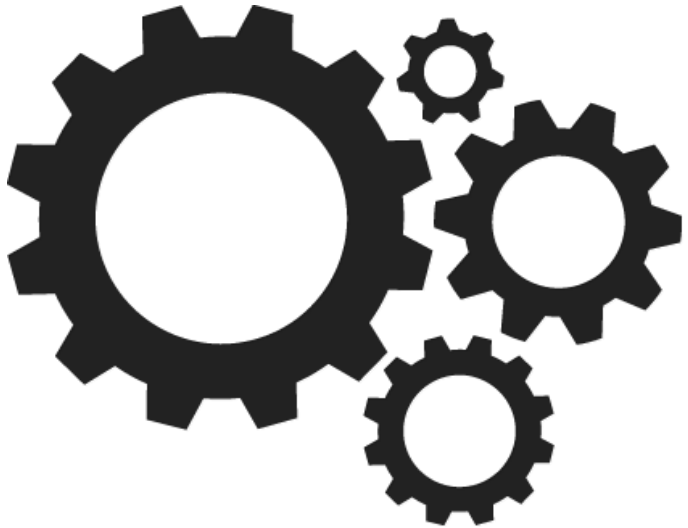
Antimicrobiano

No Antimicrobiano

Validamos las predicciones experimentalmente



Para que esto funcione el proceso debe estar bien coordinado



La creación de fuentes de datos es vital

1. Crear recursos para el almacenamiento y la consulta de datos
2. Procesamiento de archivos existentes
3. Mejoramiento a la accesibilidad de los archivos (con miras al acceso programático)
4. Siempre tener en mente la escalabilidad

Muchas gracias por su atención