



MY INTERNSHIP AT ICAO

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Marie Vazquez

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- Personal introduction
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Presentation

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- Marie VAZQUEZ



- Why aviation ?



Searching information

N2631A // NZGS1A

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UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION—FEDERAL AVIATION ADMINISTRATION STANDARD AIRWORTHINESS CERTIFICATE			
1 NATIONALITY AND REGISTRATION MARKS	2 MANUFACTURER AND MODEL	3 AIRCRAFT SERIAL NUMBER	4 CATEGORY
N2631A	PIPER PA-22-135	22-903	NORMAL
5. AUTHORITY AND BASIS FOR ISSUANCE This airworthiness certificate is issued pursuant to the Federal Aviation Act of 1958 and certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to conform to the type certificate therefor, to be in condition for safe operation, and has been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation, except as noted herein. Exceptions: NONE			
6. TERMS AND CONDITIONS Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator, this airworthiness certificate is effective as long as the maintenance, preventative maintenance, and alterations are performed in accordance with Parts 21, 43, and 91 of the Federal Aviation Regulations, as appropriate, and the aircraft is registered in the United States.			
DATE OF ISSUANCE October 10, 1995	FAA REPRESENTATIVE <i>Marion W. Williams</i> MARION W. WILLIAMS	DESIGNATION NUMBER SW-FSDO-OKC	
Any alteration, reproduction, or misuse of this certificate may be punishable by a fine not exceeding \$1,000, or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE FEDERAL AVIATION REGULATIONS.			
FAA Form 8100-2 (8-82)		GPO 892-804	

Artificial Intelligence can help us

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Transforming a picture into text

Reading the document and finding the information

Comparing with the ICAO database

Giving the percentage of similitude

- Tesseract
- Date_checker
- Jellyfish
- Pandas
- JSON_reading

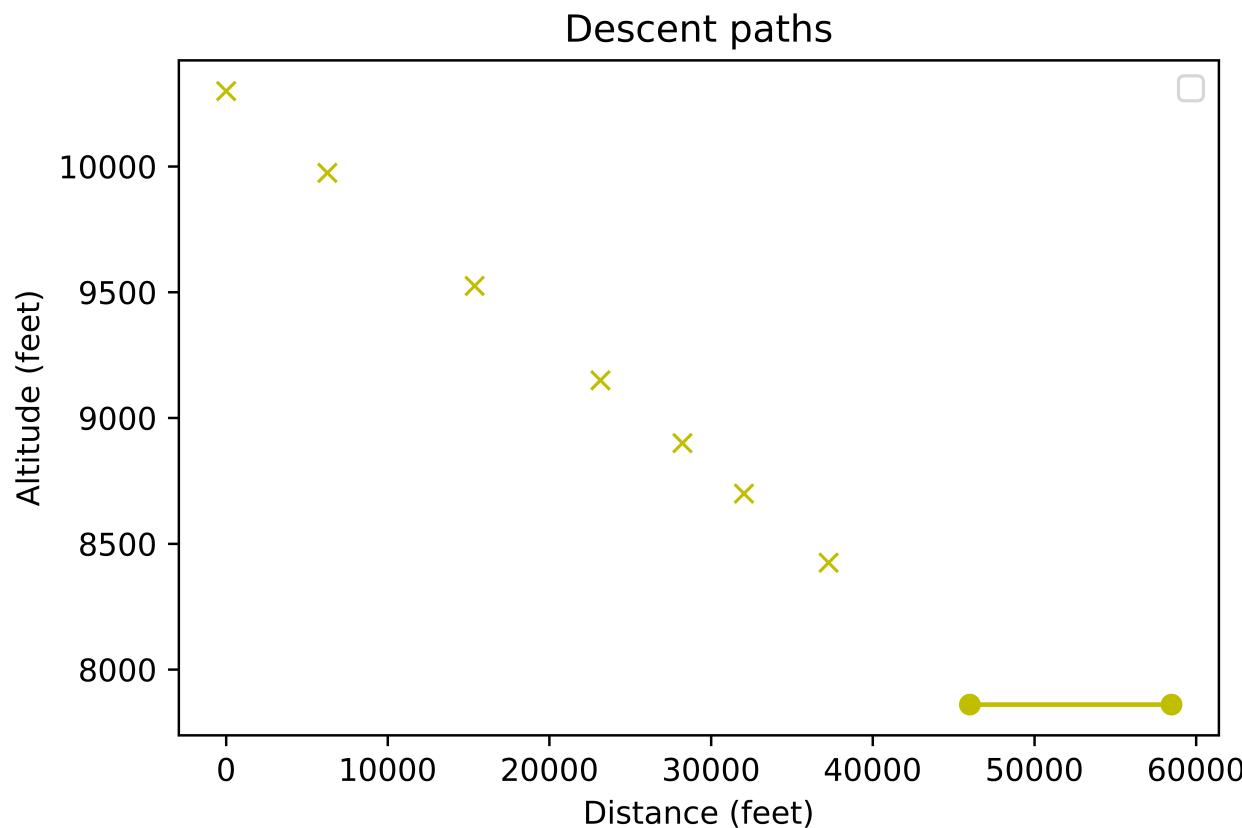
- The program gives you advices
- It is a time-saver
- Future work : other documents, other languages

Long landing prediction

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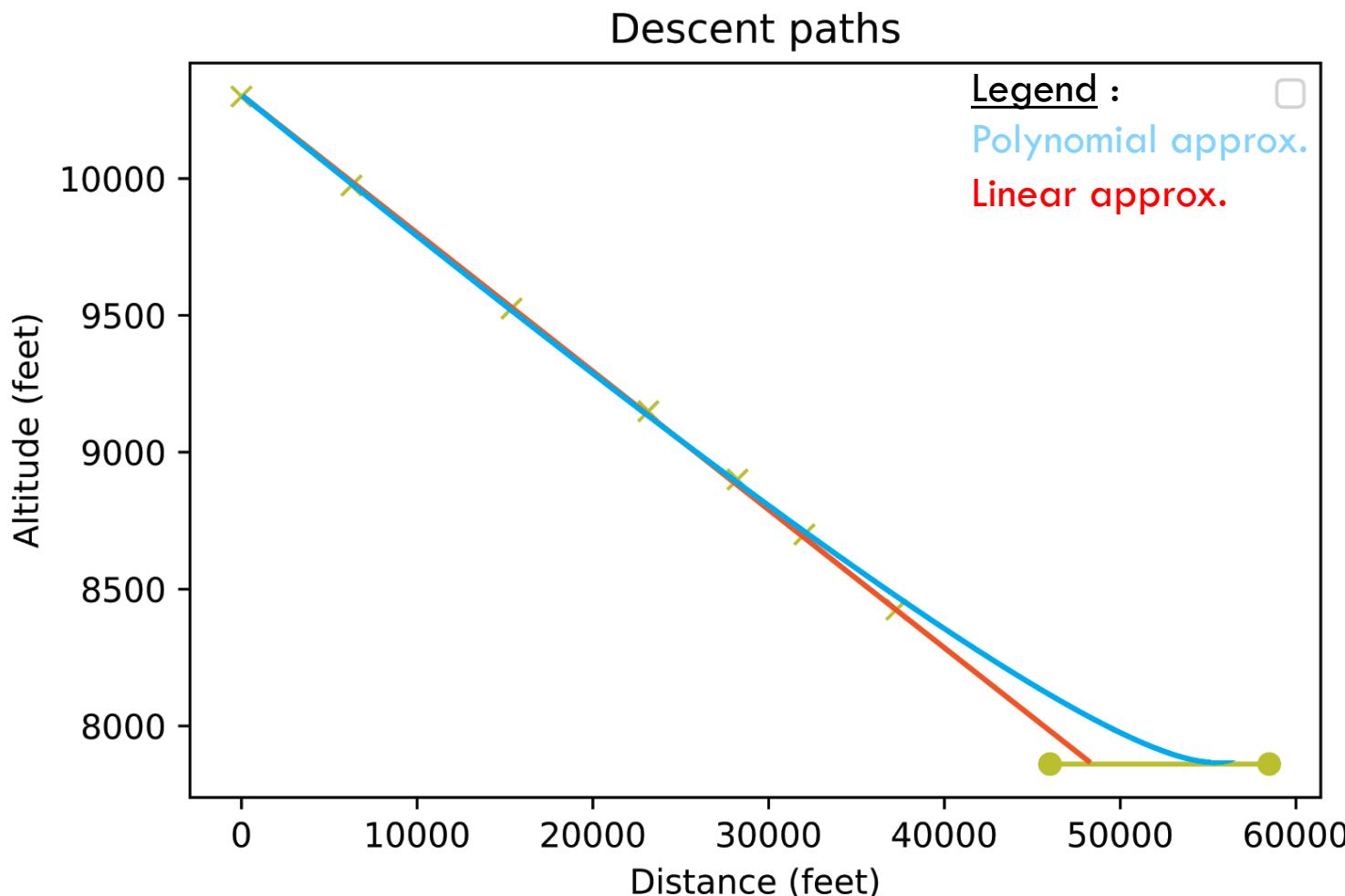


more than 600m (1970 feet) from the threshold



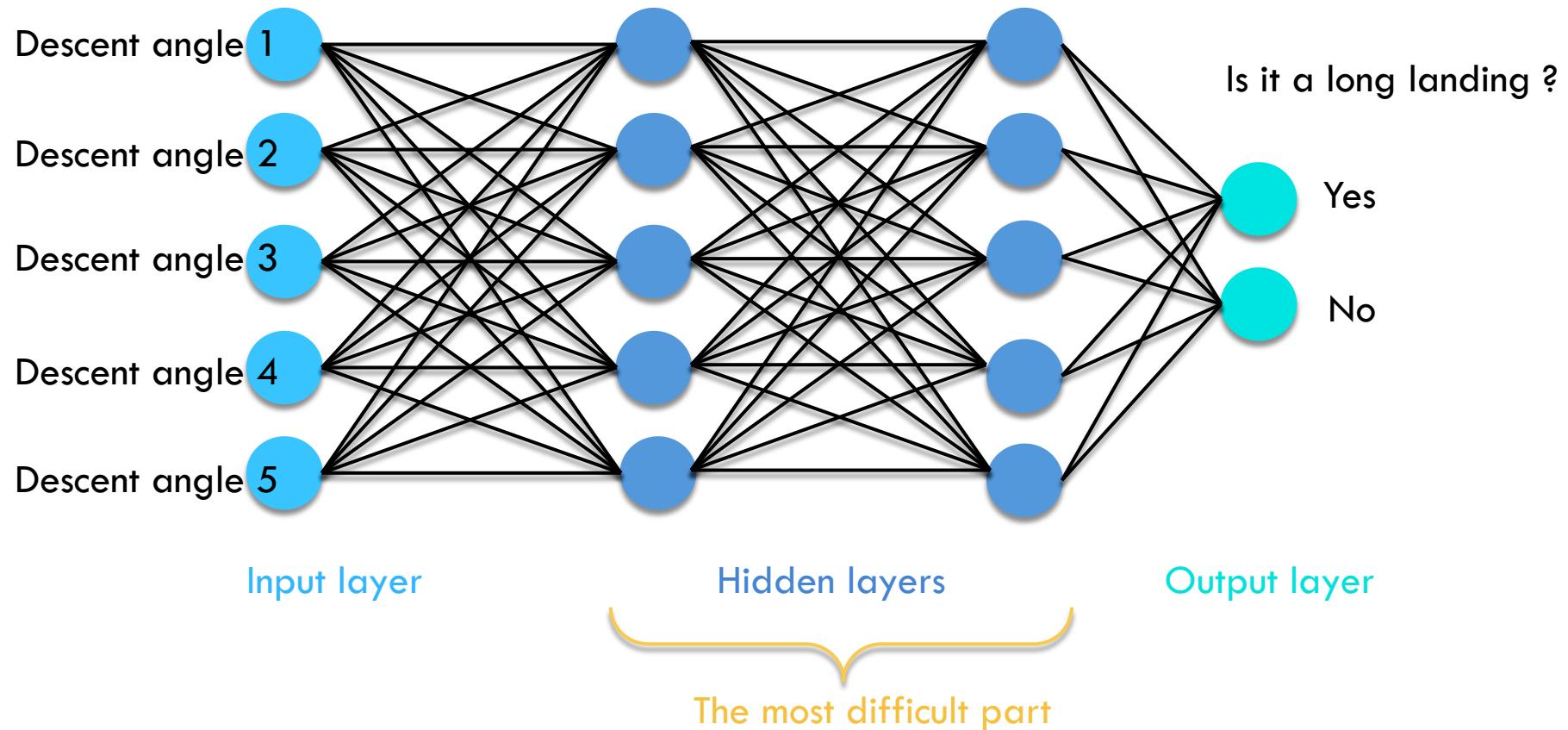
Approximation

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Neural network

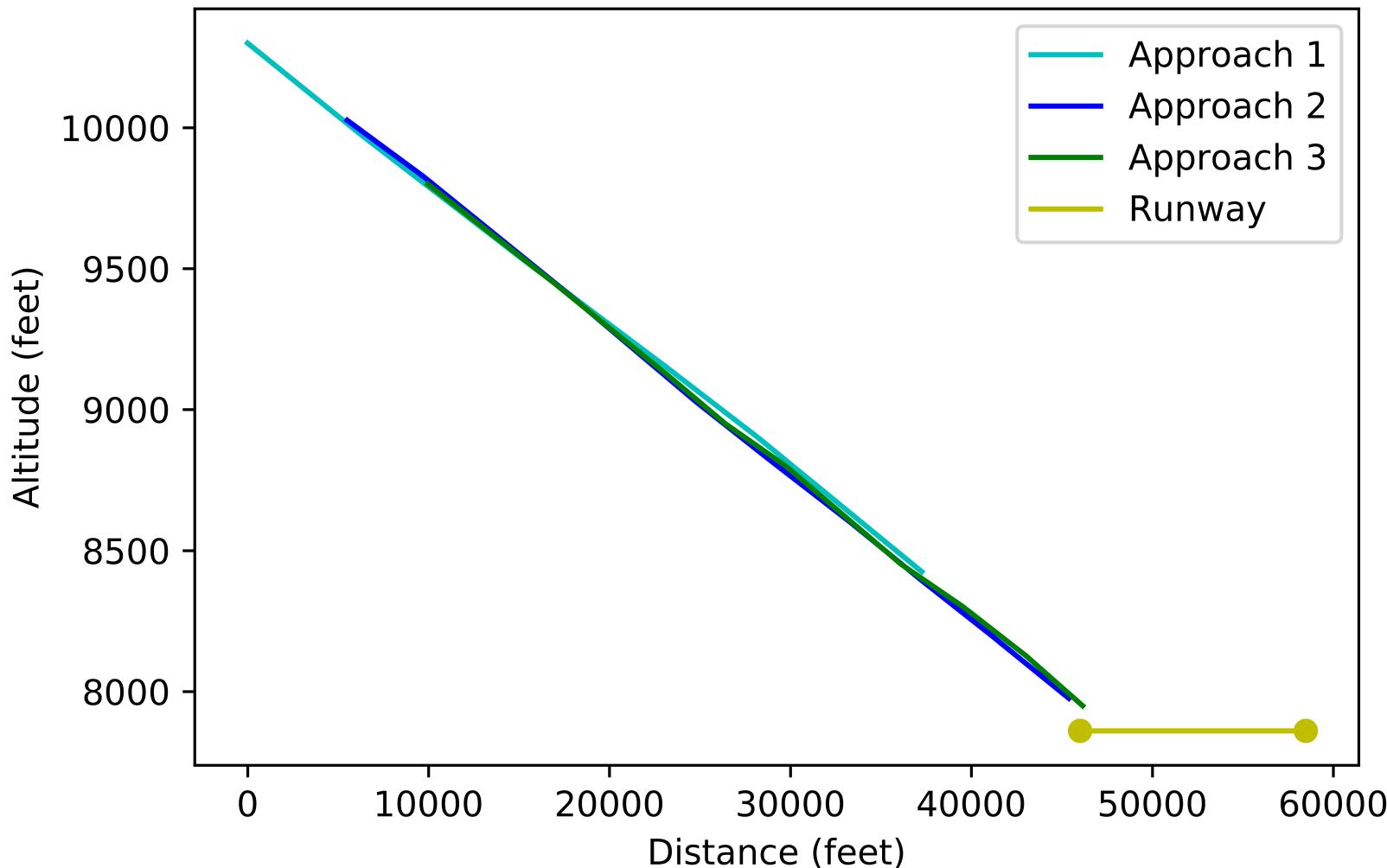
8



What is the difference ?

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Descent paths



What is the difference ?

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Descent paths

Approach 1
Approach 2
Approach 3
Runway

Altit

8500

8000

0

10000

20000

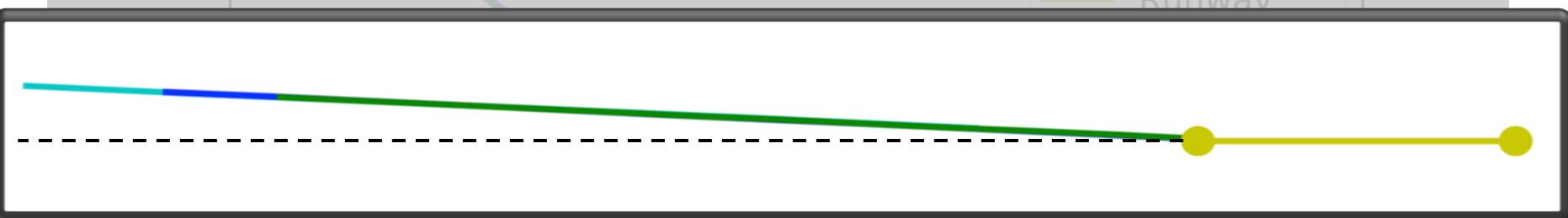
30000

40000

50000

60000

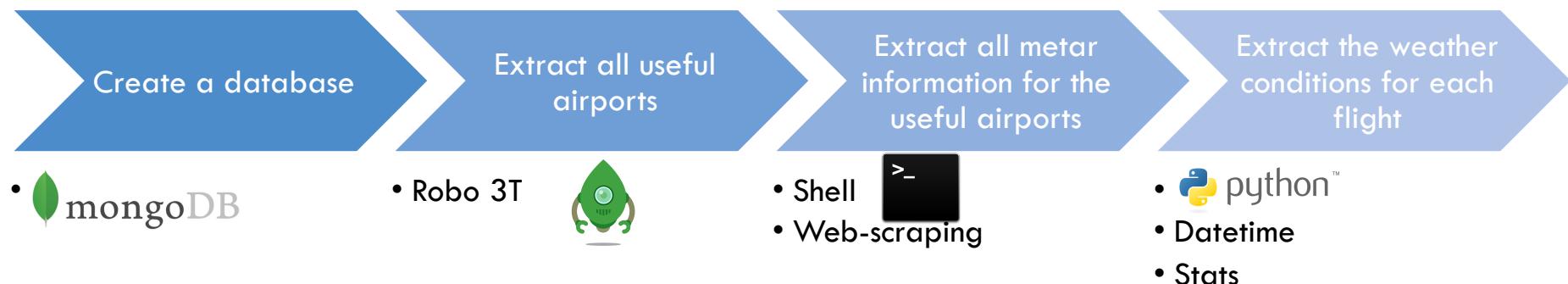
Distance (feet)



Weather conditions : tailwind

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□ Data : one year of Avianca flights

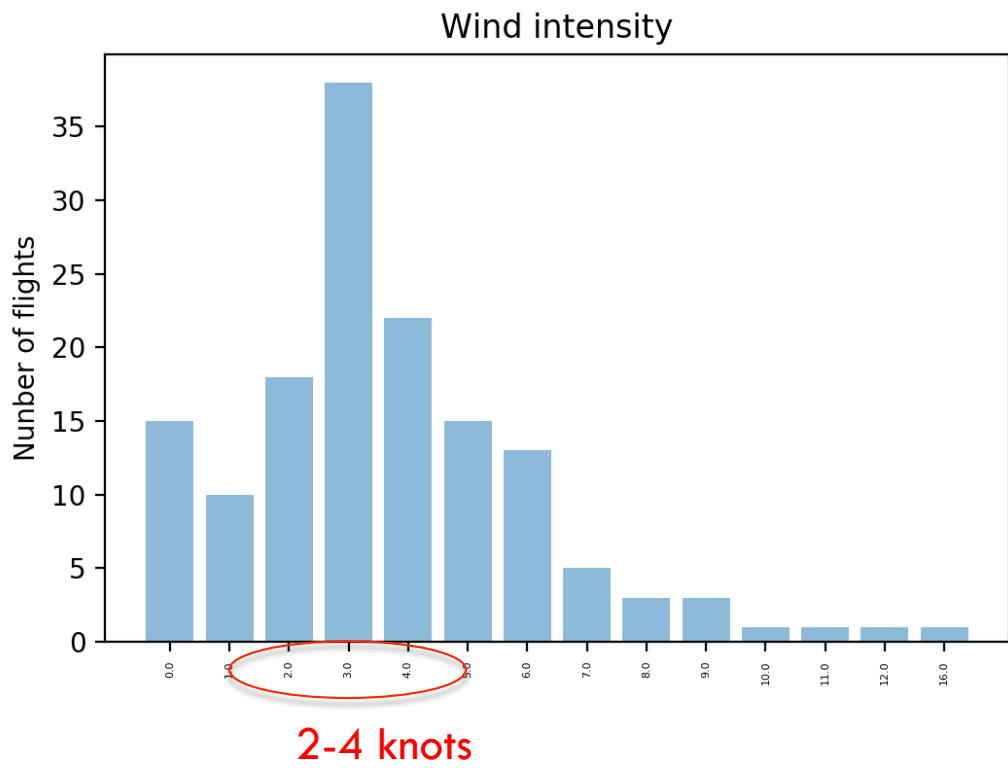


□ Results

Data	Tailwind	No tailwind	Total
Long landing	146	397	543
Normal landing	57089	79227	136316
Total	57235	79624	136859

Data analysis - χ^2 test

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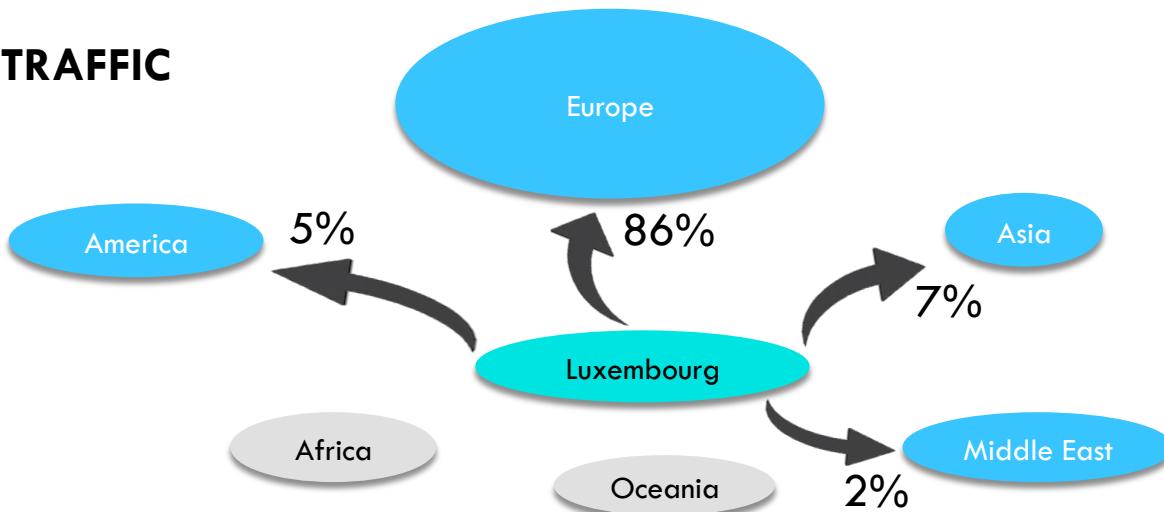


- $10^{-12} < 0,05 \rightarrow$
Tailwind impacts the landing
- Probability of long landing with tailwind : **0,26%**
- Future work : other airlines, other parameters, other airports

Connectivity app : Luxembourg

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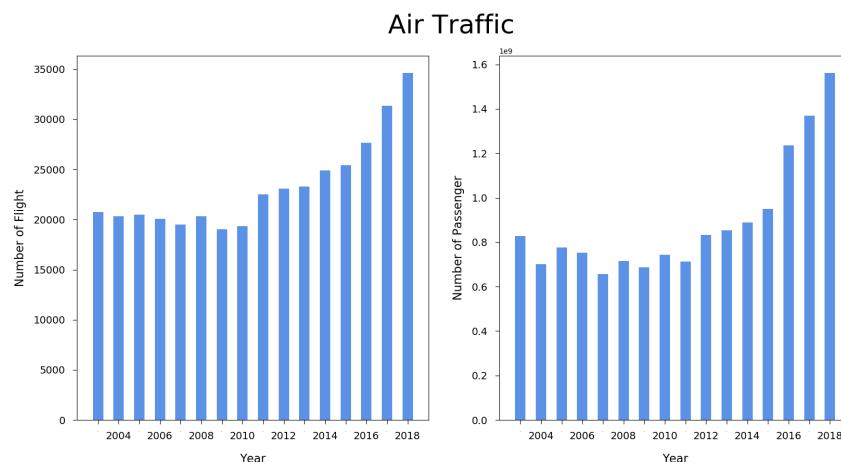
TRAFFIC



Number of flights : 54 278
→ Intl : 100%
→ Domestic : 0%

Intl destinations
→ Directly connected : 8%
→ Connected states : 180

Category : Upper Middle



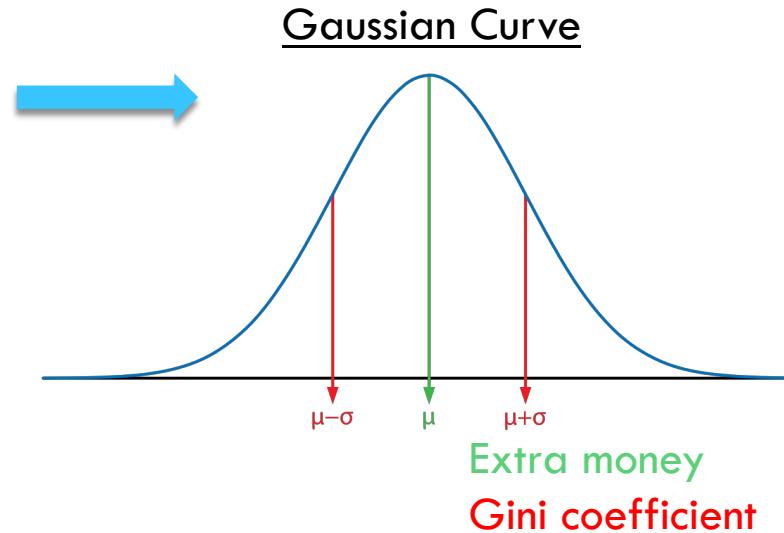
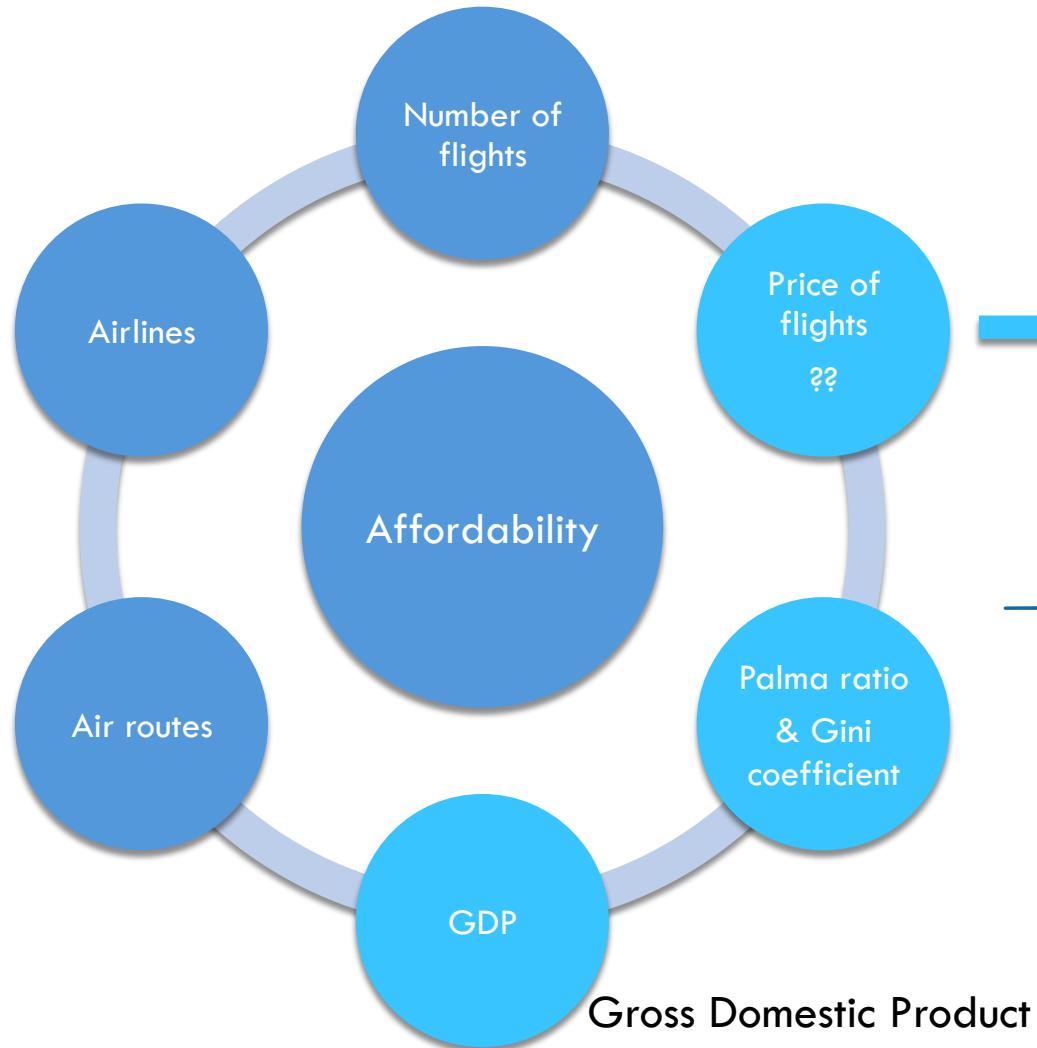
AIRLINES

AIRPORTS

ECONOMIC AND SOCIAL INDICATORS

Economic and social indicators

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What I have learnt

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- How to use chopsticks 
- Working in team in english with people from different countries
- Programming
 - Creating a database
 - Coding directly in the shell
 - Web-scraping
 - Github 

THANK YOU