

737-MAX Casestudy

17-313: Foundations of Software Engineering

<https://cmu-313.github.io>

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Gentle Reminder

- Please close laptops
- Tablets with stylus ok



737-MAX Case Study

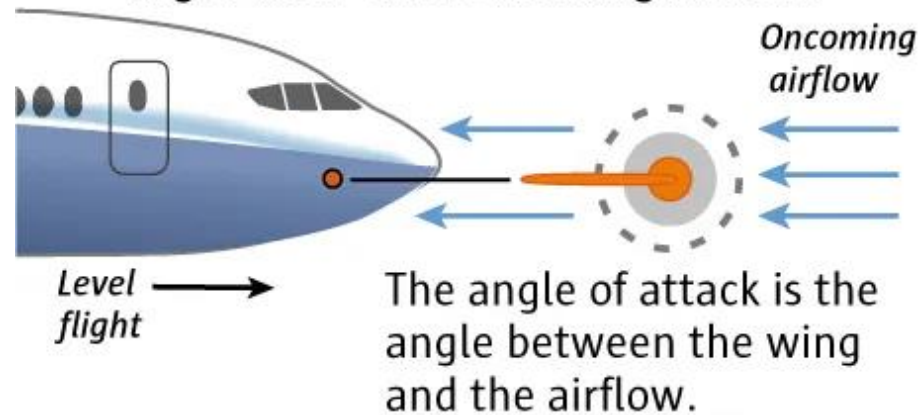




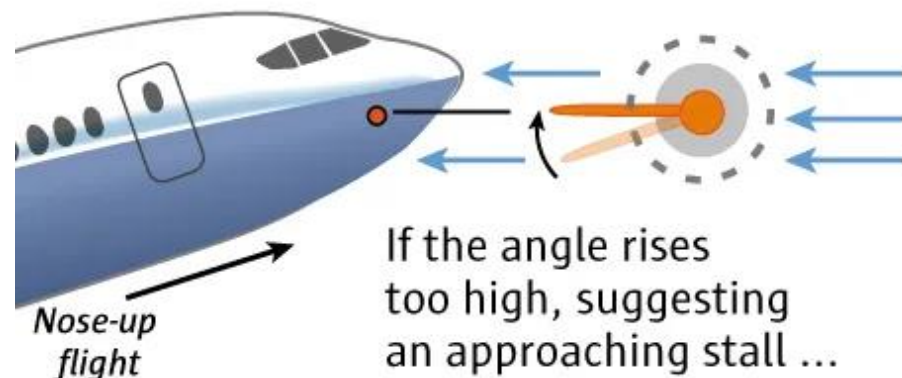


How the MCAS (Maneuvering Characteristics Augmentation System) works on the 737 MAX

1. The angle-of-attack sensor aligns itself with oncoming airflow.

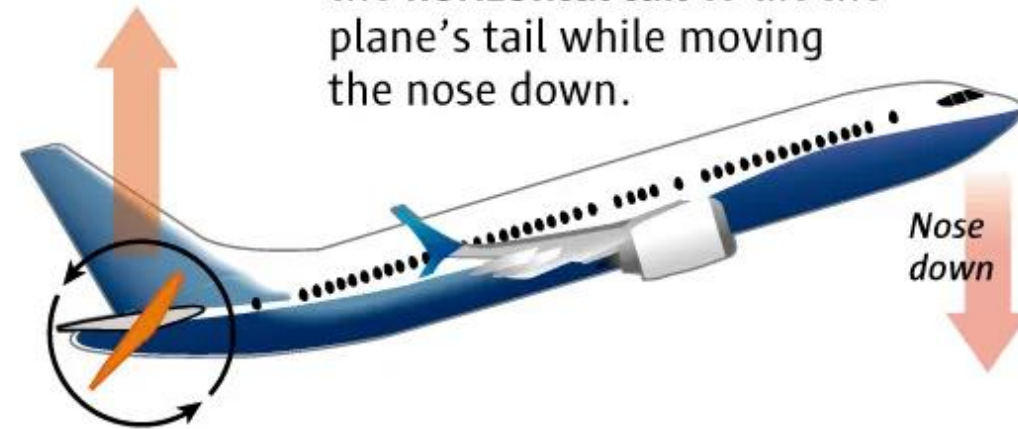


2. Data from the sensor is sent to the flight computer.



... the **MCAS** activates.

3. MCAS automatically swivels the **horizontal tail** to lift the plane's tail while moving the nose down.



Horizontal tail

In the Lion Air crash, the angle-of-attack sensor fed false information to the flight computer.

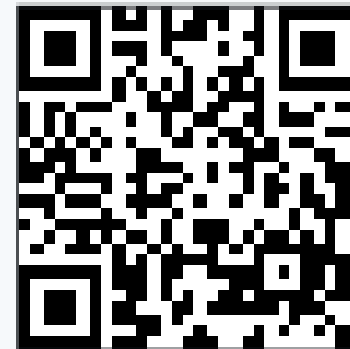
Sources: Boeing, FAA, Indonesia National Transportation Safety Committee, Leeham.net, and The Air Current

Reporting by DOMINIC GATES,
Graphic by MARK NOWLIN / THE SEATTLE TIMES

Spend an hour with us. Earn **\$25.**

- I'm **Yiliang Liang**, PhD student co-advised by Prof. Joshua Sunshine and Prof. Eunsuk Kang.
- I study how people **create custom visualizations** for formal methods.
- You try a few authoring approaches; I learn what works.
- No formal methods experience needed.

WHO	18+ and able to read code
FORMAT	One appointment, one hour, over Zoom
PAY	\$25 for every participant who completes the study



Scan to fill out the pre-experiment form

forms.gle/2xztXo5YfU19MGJHA