



RATA, Measures of Reliability

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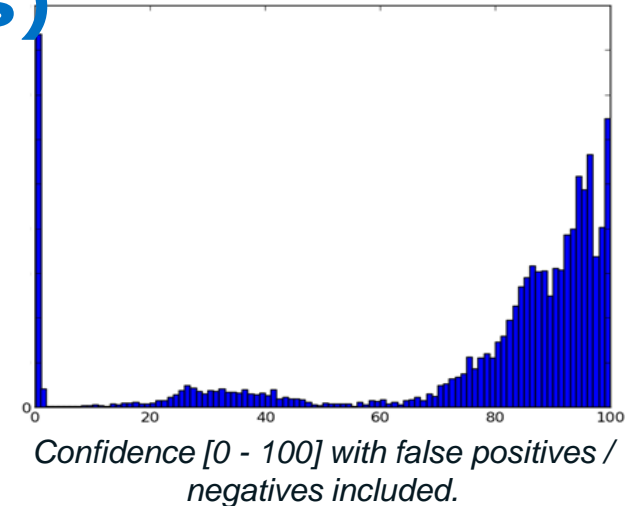


Background / Introduction

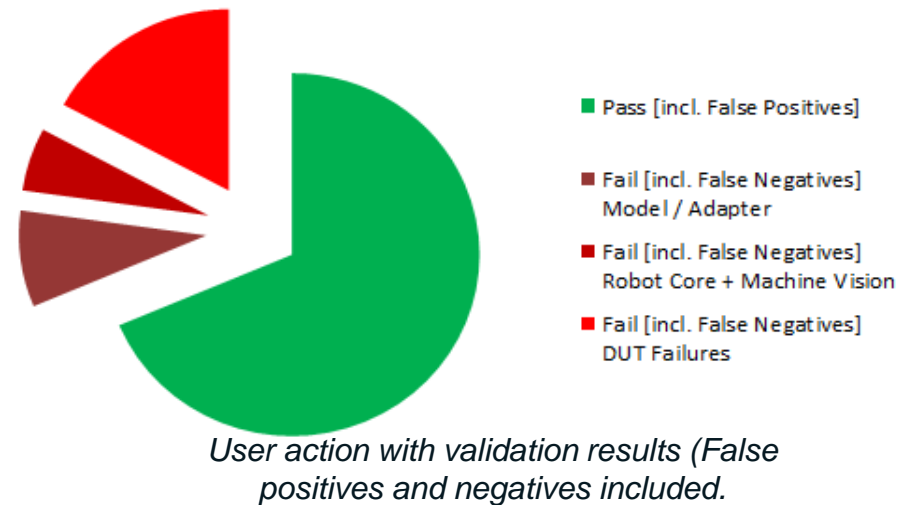
- Test System reliability is extremely important factor when it is used in validation of systems which realibility requirements are set high.
- Reliability characteristics can be divided to following:
 - Result it provides is always correct
 - It is always online
 - Results are repeatable
- In order to gain confidence within the users reliability shall be measured and metrics made available to to users. Any issues within the system are not hidden from users.
- Following methods are used to evaluate system reliability.

User Actions (passes and fails)

- After each user action made by robot it is validated that intended user action took place within the device
- Validation may be done in various methods:
 - SW methods
 - Machine vision methods
- Confidence of validation results is essential independent on validation method
- False positives and negatives are problematic as it would require to go through all validation points and do manual evaluation



of User Actions



Mean Time Between Failures / Up-time

MTBF (h)

- **Mean time between failures (MTBF)** is the predicted elapsed time between inherent failures of a system during operation. MTBF can be calculated as the arithmetic mean (average) time between failures of a system.
- MTBF is probably one of the best ways to measure and follow trend of system reliability. Failures are categorised:
 - **Major Failure:** system requires user action in order to recover
 - **Minor Failure:** system is able to recover on its own

Uptime (%)

- **Uptime** is a measure of the time a system has been working and available. In our case how long each system has been available for testing (use time / calendar time).