Census and Statistics Department
The Government of the Hong Kong Special Administrative Region

World Statistics Day 2025

AI in the Compilation of Merchandise Trade Statistics

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External Merchandise Trade Statistics

Data source of external merchandise trade statistics

✓ **Trade declarations** submitted to Government **within 14 days after shipment**

Trade Declaration

Transport mode





Commodity descriptions
(free text)

Total import/export value



Quantity





Country of origin
Country of consignment

Harmonised System Commodity code



- **70 000** trade declarations daily
- **18 million** trade declarations annually

Sources of ERRORS

✘ **Misreported Commodity Code**

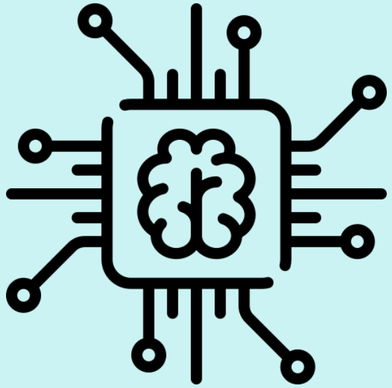
The reported code does not match with the commodity

✘ **Abnormal Unit Value**

Declared unit value is unreasonably high or low

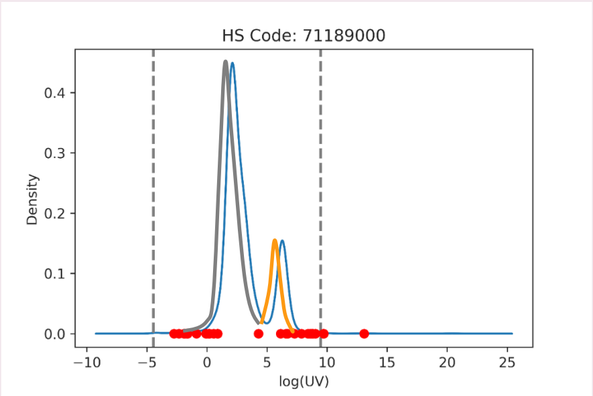
The AI Models Deployed on Processing Trade Declarations

Commodity Code Model



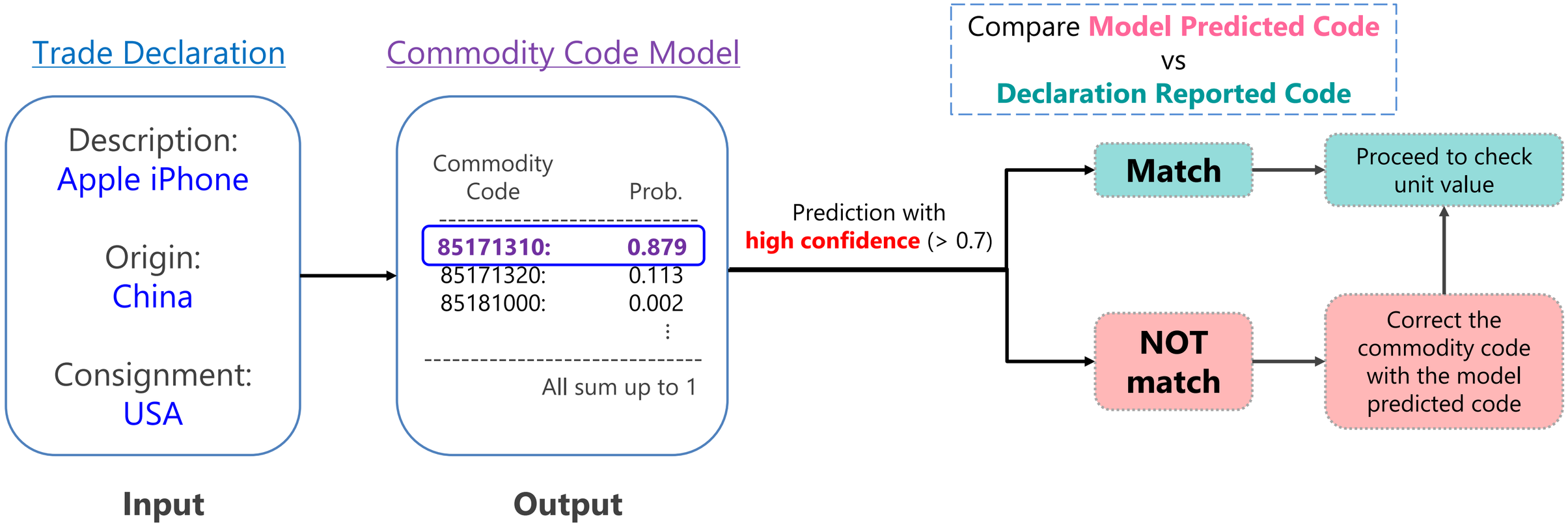
- Commodity code classification – Classify commodity code using information from trade declaration
- Deployed since Feb 2020

Unit Value Model

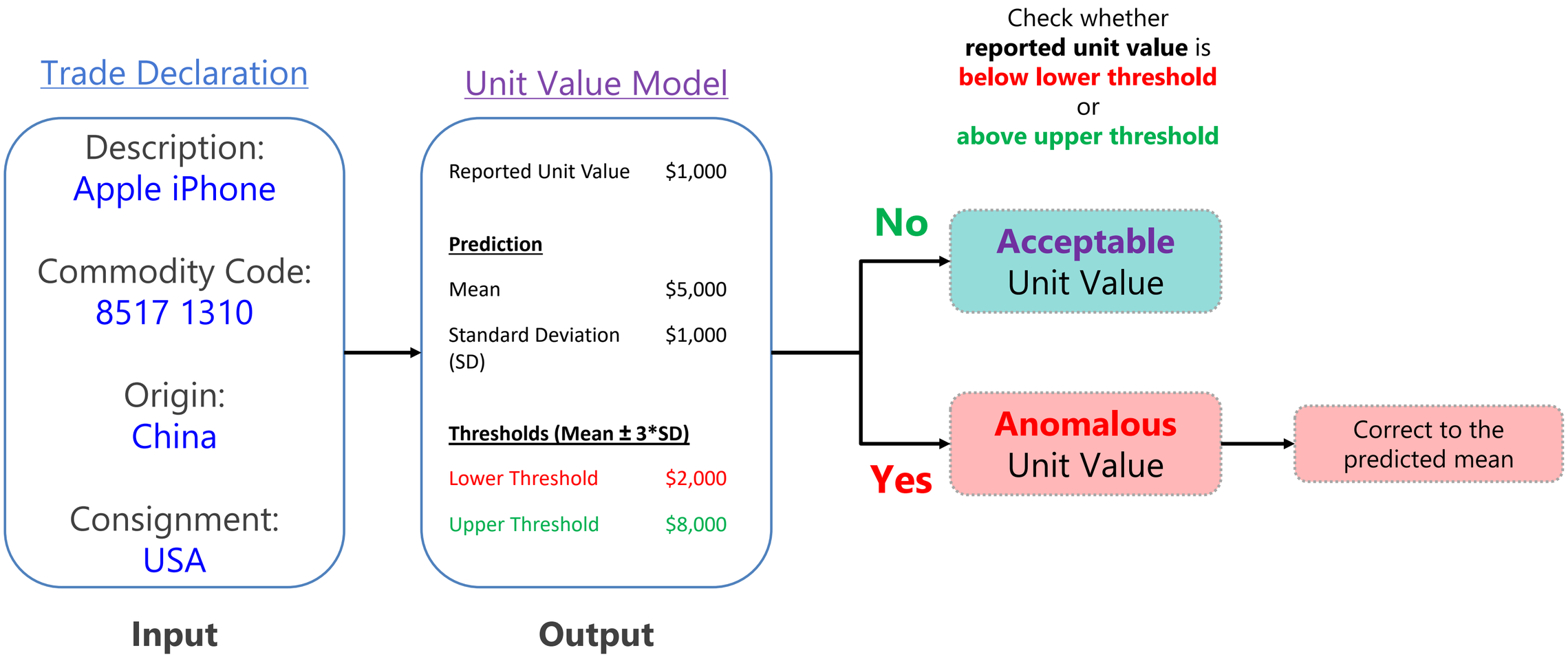


- Unit value verification – Predict a reasonable price range for goods using historical trade data
- Deployed since Sep 2023

Implementation of HS Commodity Code Model



Implementation of Unit Value Model



AI Implementation: Benefits and Challenges

Benefits

- Reduced labor costs (saving 40%+ manual effort)
- Superior error detection compared to human checking

Items to Address

- Ensure sustainability and robust to changes in data
- Require suitable re-engineering of the work processes