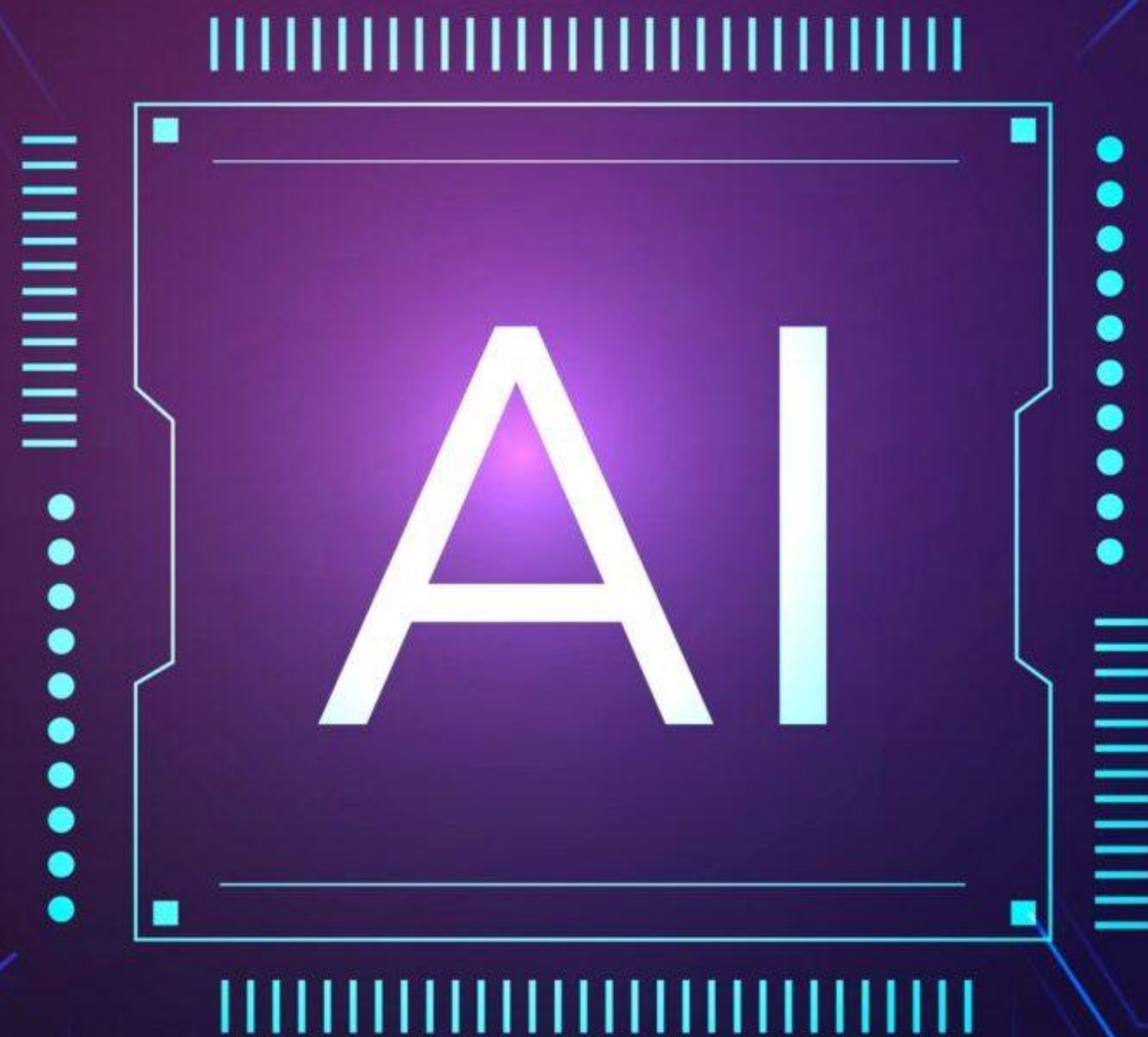
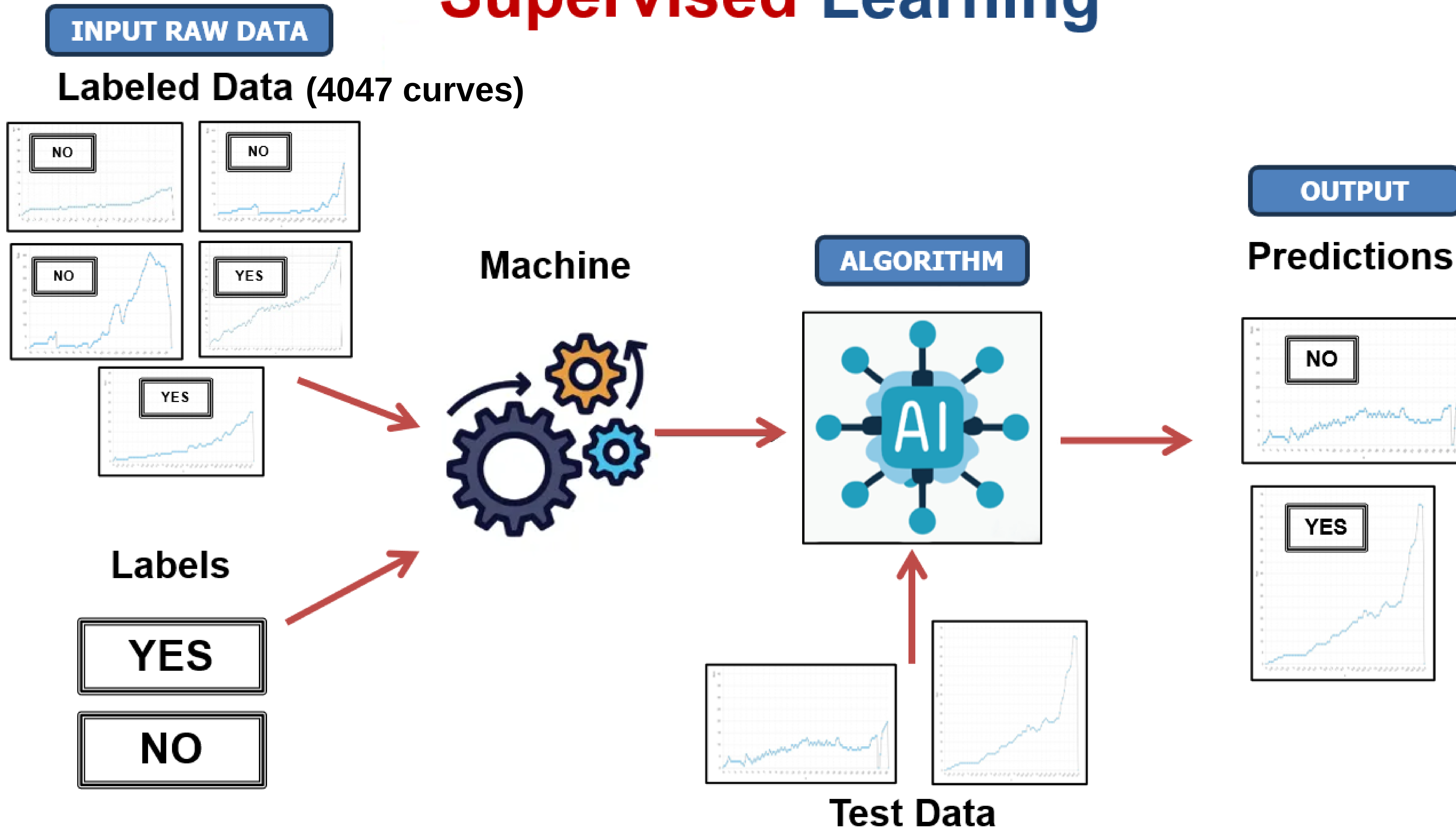


Daprile G.*, Degidi M. Comparison Between an Artificial Intelligence-Driven Novel Tool (AIT) and Resonance Frequency Analysis (RFA) in the Evaluation of Immediate Loading Feasibility: Preliminary Results.



Supervised Learning



Purpose: The aim is to compare AIT and RFA outputs in the evaluation of immediate loading feasibility.

M&M: During the period between January 2022 and March 2024, for all the implants placed by the authors, AIT indication of immediate loading feasibility (Yes or No class) and Implant Stability Quotient (ISQ) values were recorded.

ISQ values were then divided into 2 groups: suitable (≥ 70 ISQ) or not-suitable (< 70 ISQ) for immediate loading following the scale provided by the manufacturer.

Both systems were set for the evaluation of implants, presuming that each of them would be immediately loaded by a single non splinted crown.

Results

- Data from 1220 implants were collected.
- Following RFA indications 961 implants (78,8%) were suitable for immediate loading of a single non splinted crown, whereas 259 (21,2%) presented values <70 ISQ
- when evaluated by AIT, 796 (65,2%) were suitable for immediate loading of a single non splinted crown, whereas 424 (34,8%) implants resulted not suitable.
- the evaluation did not match in 349 cases: 257 times (26,7% of $ISQ > 70$) AIT evaluated implants not suitable for immediate loading while RFA evaluated them suitable. In 92 cases (11.5% of YES class) the evaluations were inverted.

Conclusions and clinical relevance

ISQ values are sufficient for immediate loading of an implant supporting a single non splinted crown in a larger number of cases compared to AIT evaluation.

Following RFA scale, there is a high risk of loading implants that are not suitable for immediate loading according to AIT.