

Machine learning-based online monitoring for 3D printing process

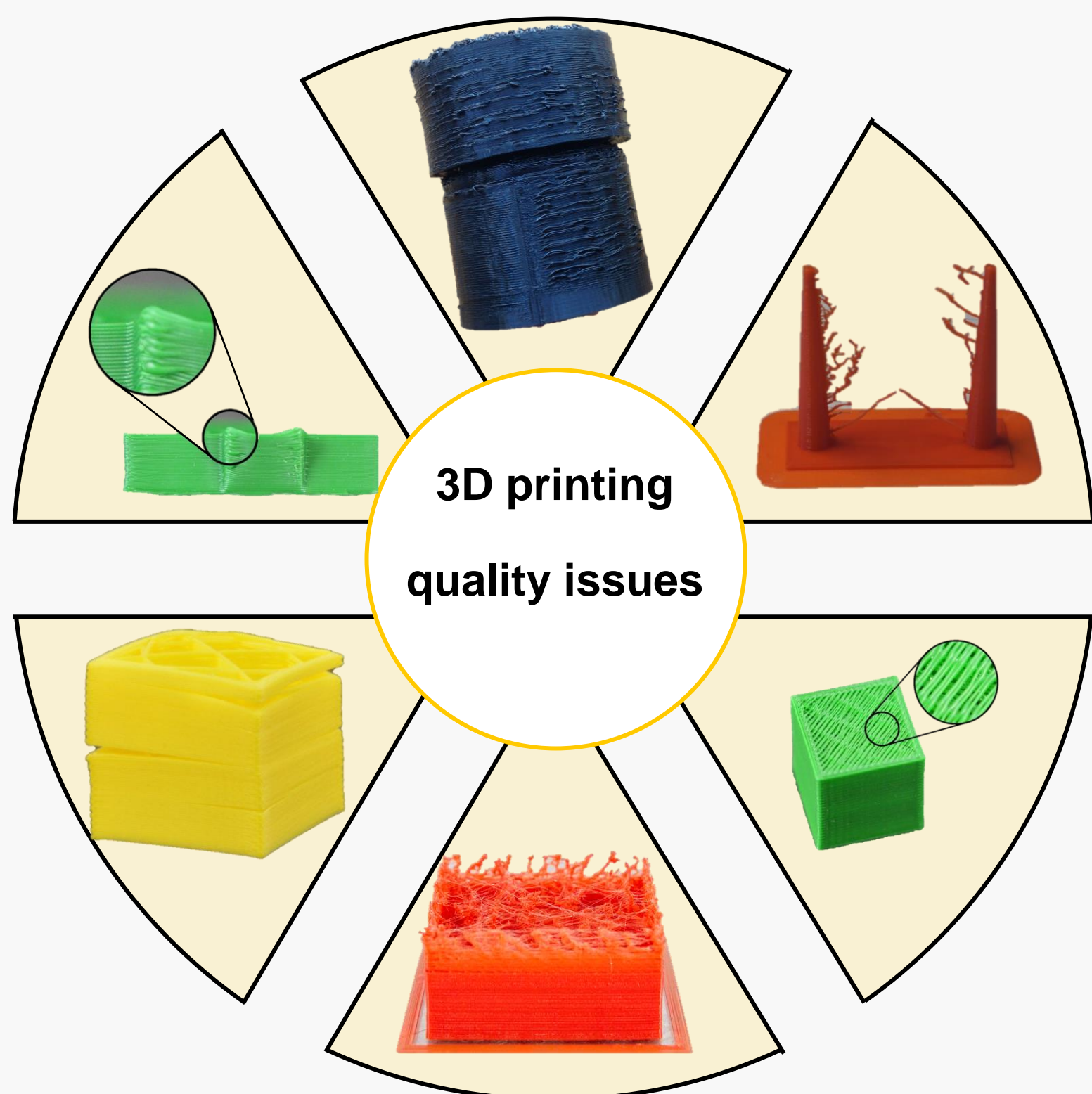
Jiacheng Xue, Lingling Wu*, Xinyun Chi, Xiaoyong Tian

State Key Laboratory for Manufacturing Systems Engineering, Xi'an Jiaotong University, Xi'an, China

E-mail: Lingling.wu@xjtu.edu.cn

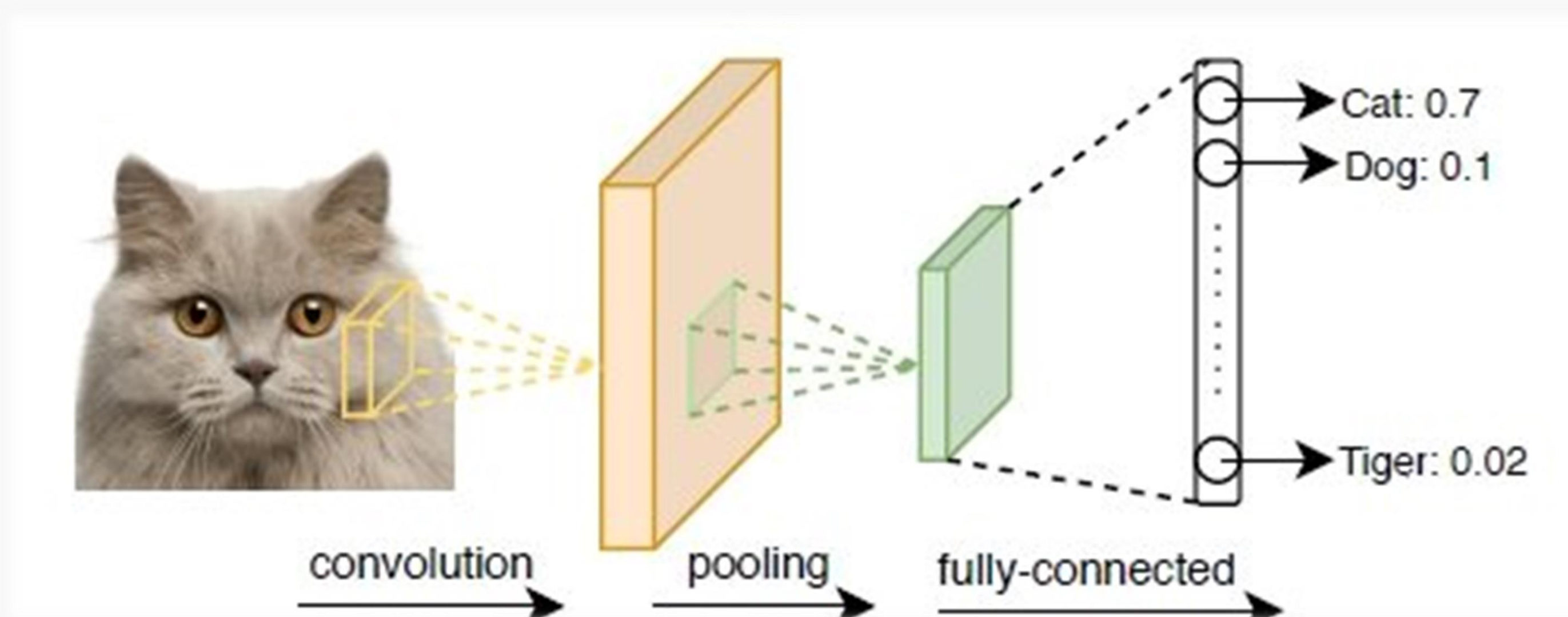
Introduction

➤ Online monitoring for 3D printing



- Avoid human involvements in dangerous scenarios
- Automatic feedback control of 3D printers
- Reduce material waste
- Improve fabrication quality

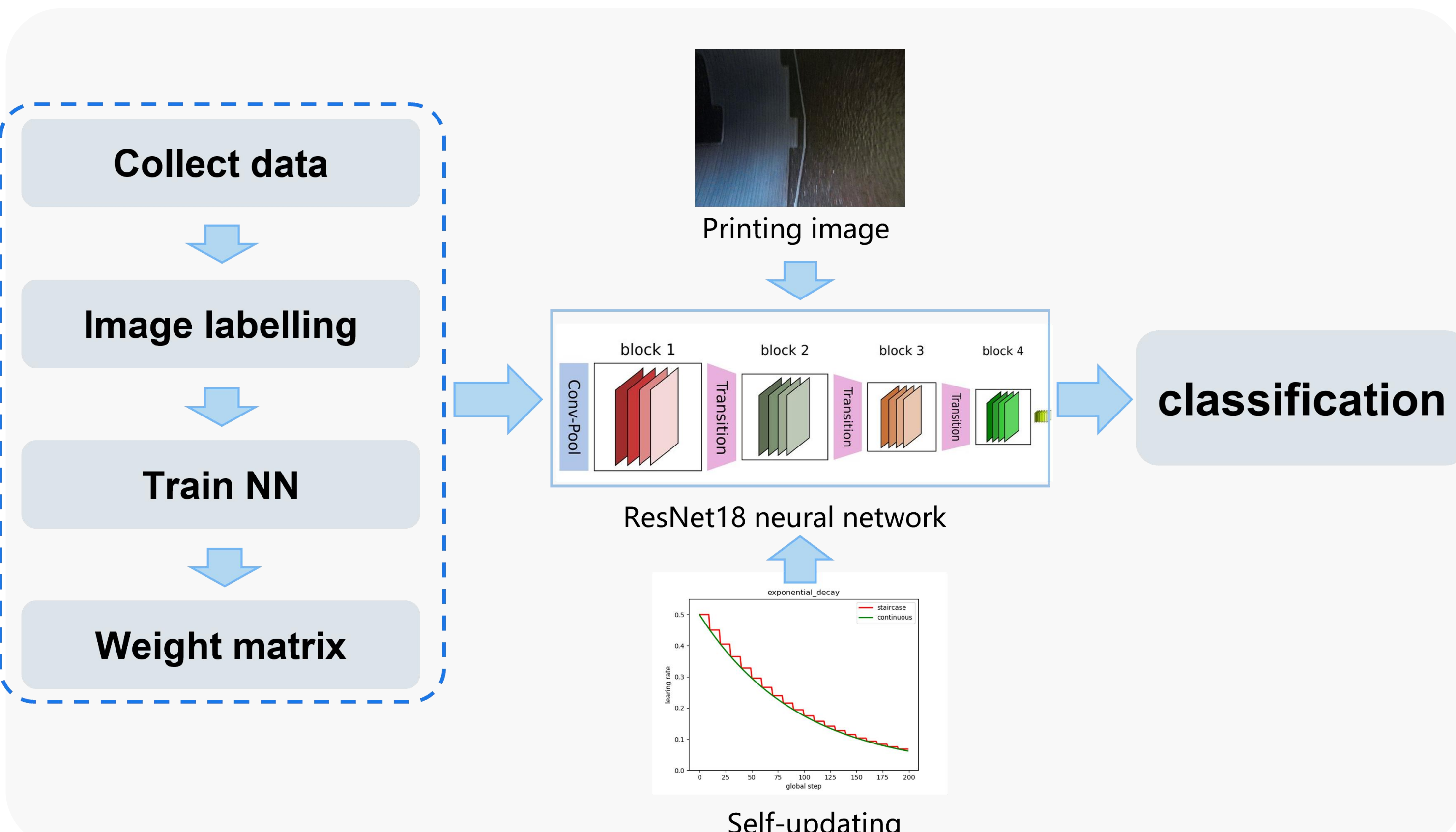
➤ Machine learning-based image recognition



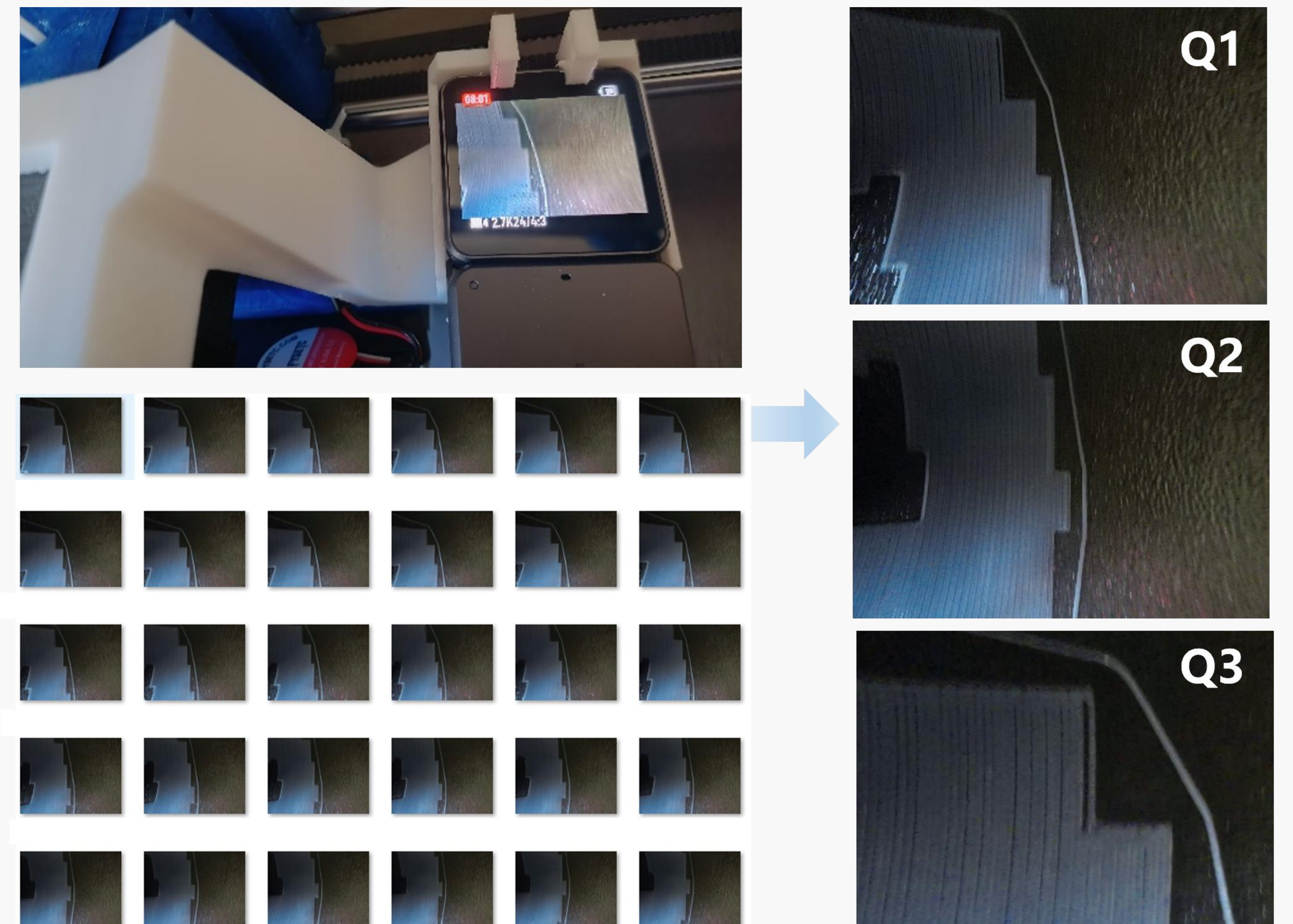
➤ Questions

How to achieve online 3D printing monitoring via machine learning-based image recognition approach?

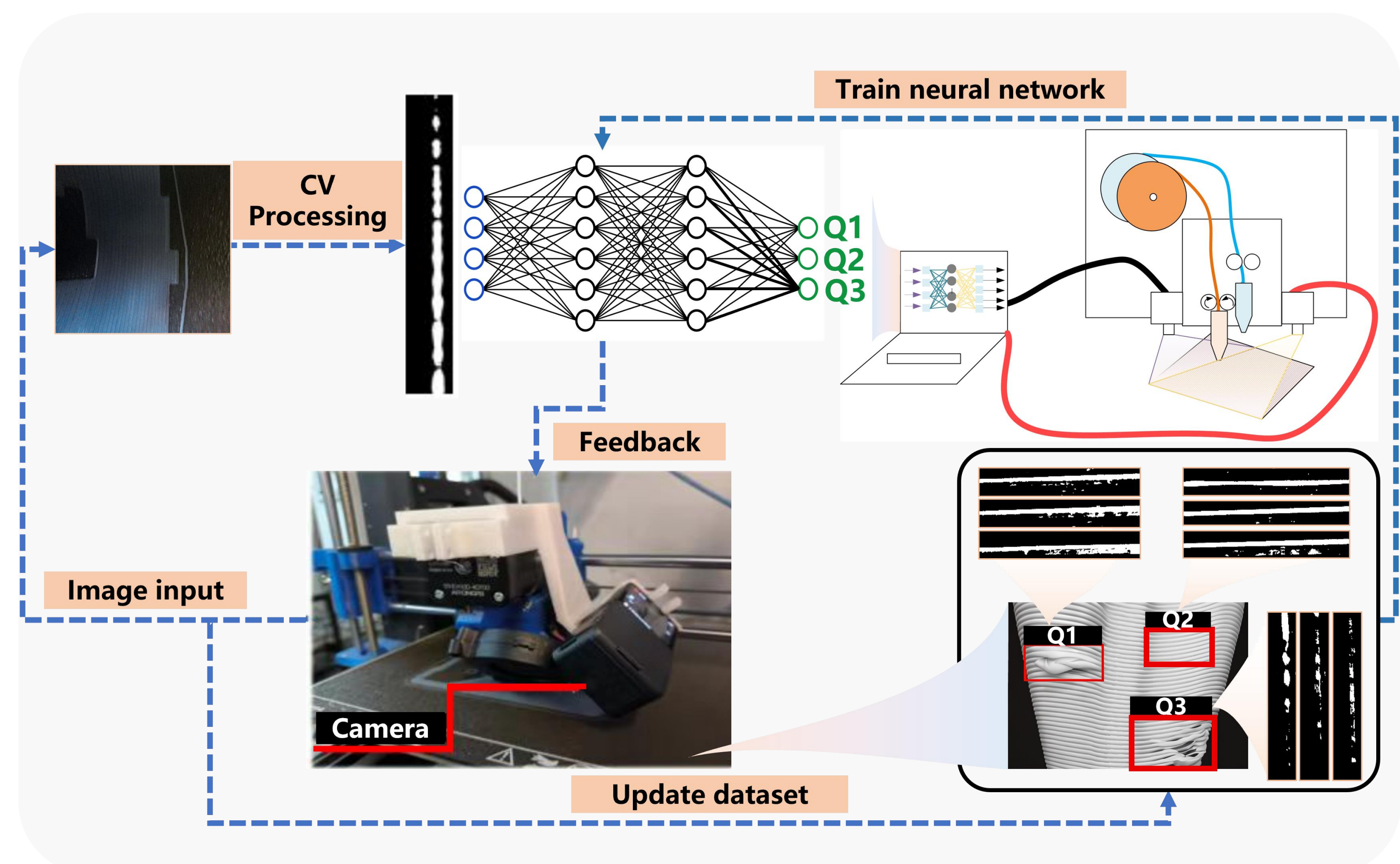
General strategy



3D printing data acquisition



Real-time detection



Result

