The shared codes are supplementary data for Ref. [1].

**Notes for the matlab codes and data**

* s\_8\_1\_1\_avgFFT.m is used to examine the effect of different tests selected on the synthetized FFT in Figs 7 and 8. s\_8\_1\_1\_avgFFT\_Fig1.fig and s\_8\_1\_1\_avgFFT\_Fig2.fig are outputs from s\_8\_1\_1\_avgFFT.m.
* s\_8\_3\_1\_FeasExt.m is used to extract the image features from all original data
* ROC\_FeasSpace.m is used to assess the feature performance (Figs. 10 and 11 in Ref. [1])
* FstSt2013\_section831\_Ver.mat and label\_Acc2013\_m1Ver1.mat are the image features and test stability label, respectively.
* ROC.m can be referred to “S. Theodoridis, A. Pikrakis, K. Koutroumbas, and D. Cavouras, *Introduction to Pattern Recognition*, ed Boston: Academic Press, 2010”
* fft\_yun.m is not a code developed by the first author. You can use fft function in Matlab instead.

**Reference**

[1] Chen Y, Li H, Hou L, Bu X. Feature extraction using dominant frequency bands and time-frequency image analysis for chatter detection in milling. Precision Engineering, 2019, 56: 235-245.