**Creation of a Robust Machine Learning Classifier for Patient Ventilator Asynchrony**

Gregory B. Rehm1, Jinyoung Han2, Brooks T. Kuhn3, Jean-Pierre Delplanque4, Nicholas R Anderson5, Jason Y. Adams3\*, Chen-Nee Chuah6\*

\*these authors contributed equally to this work

1University of California Davis, Department of Computer Science, Davis, CA, USA

2Hanyang University, College of Computing, Seoul, Korea

3University of California Davis, Division of Pulmonary, Critical Care, and Sleep Medicine, Sacramento, CA, USA

4University of California Davis, Department of Mechanical and Aerospace Engineering,

Davis, CA, USA

5University of California Davis, Department of Public Health Sciences, Sacramento, CA, USA

6University of California Davis, Department of Electrical and Computer Engineering, Davis, CA, USA

Abstract Word Count: 310

Manuscript Word Count: 7004

Keywords: Patient Ventilator Asynchrony, Respiration, Artificial, Machine Learning, Decision Support Systems, Clinical, Intensive Care Units