Real-Time Risk Control System for CNP
(Card Not Present)

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ABSTRACT
AliExpress is an online e-commerce platform for wholesale products. Credit card is one of its various payment methods. An online transaction using credit cards is called a "card not present" (CNP) transaction where the physical card has not been swiped into a reader. It’s also the major type of credit card frauds causing a great overhead of the online operation, sellers, and buyers. To protect customers on our platform, we developed a real-time credit card fraud detection system, using the machine learning technologies which allows us to achieve a precision of 97%, at a recall of 80%. With the system, we can provide the best online shopping experience for our customers, without the high risk of online transactions which always result a high operational cost. We will briefly share our experience and practice in the expo.

Categories and Subject Descriptors
H.2.8 [Database Management]: Data Mining.

General Terms
Algorithms, Experimentation, Human Factors, Measurement.

Keywords
Data Mining in e-commerce, fraud detection, financial risk modeling.

Bio
Dr. Tai Hsu’s research/specialized areas cover algorithm, artificial intelligence, chemistry, computational biology, cybernetics, data mining, machine learning, robotics, and supercomputing. His work for AliExpress.com significantly reduced the online risk, competitive with Cybersource’s. His work in machine 3D vision won the best paper award (European Meeting in on Cybernetics and Systems Research, 2008 and 2006). His research in computational biology won the NLM award (National Library of Medicine, of National Institute of Health, 2001). His work in quantum chemistry won the best paper award (Journal of Chinese Chemical Society, Taiwan). He was named the distinguished employee (2001) of Providian Financial Corporation. Tai is currently a principal scientist of Alibaba Group, as well as the R&D director of Northwestern Polytechnic University. Prior to Alibaba, he worked for several Fortune 500 companies in San Francisco Bay Area. He holds a Ph.D. in CS from Oregon State University, an MBA from Northwestern Polytechnic University, a B.A. in CS plus a minor in math from Wartburg College, and a B.S. in chemistry from National Taiwan University.