

Performance Anomaly and Change Point Detection For Large-Scale System Management

Igor Trubin
Capital One Bank,
Igor.Trubin@capitalone.com

ABSTRACT

We begin by presenting a short overview of the classical Statistical Process Control based Anomaly Detection techniques and tools including Multivariate Adaptive Statistical Filtering, Statistical Exception Detection System, Exception Value metric based Change Point Detection, control chart, business driven massive prediction and methods of using them to manage large-scale systems (with real examples of applying that to large financial companies) such as on-prem servers fleet, or massive

clouds. Then we will turn to the presentation of modern techniques of anomaly and normality detection, such as deep learning and entropy-based anomalous pattern detections (also successfully tested against a large amount of real performance data of a large bank).

KEYWORDS

Anomaly detection; change point detection; business driven forecast; system performance; control chart.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from Permissions@acm.org.

ICPE '20 Companion, April 20–24, 2020, Edmonton, AB, Canada

© 2020 Association for Computing Machinery.

ACM ISBN 978-1-4503-7109-4/20/04...\$15.00

<https://doi.org/10.1145/3375555.3384934>