

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
13 January 2022 (13.01.2022)



(10) International Publication Number  
**WO 2022/011181 A1**

(51) International Patent Classification:  
G06N 5/02 (2006.01)

(21) International Application Number:  
PCT/US2021/040950

(22) International Filing Date:  
08 July 2021 (08.07.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
16/926,535 10 July 2020 (10.07.2020) US

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(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,  
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,

DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,  
HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN,  
KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD,  
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,  
NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW,  
SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,  
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,  
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,  
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
KM, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

— as to the applicant's entitlement to claim the priority of the  
earlier application (Rule 4.17(iii))

**Published:**

— with international search report (Art. 21(3))

(54) Title: AUTO-TUNING OF RULE WEIGHTS IN PROFILES

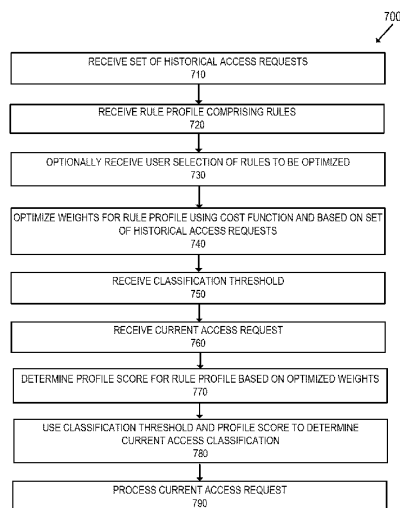


FIG. 7

(57) Abstract: Disclosed is a system to optimize rule weights for classifying access requests so as to manage rates of false positives and false negative classifications. A rules suggestion engine may suggest a profile of classification rules to a merchant for access requests. The system can optimize weights for the profile of rules using a cost function based on a training set of historical access requests, for example using stepwise regression or machine learning (ML). The system can compute a profile score based on the optimized weights, for example by summing the weights. The system statistically analyzes the profile score using classification thresholds and the historical access requests. The system can perform receiver operating characteristic (ROC) analysis for various threshold values, enabling a user to select a suitable threshold. The system can further optimize by adding or removing rules from the profile of rules.

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