

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
13 February 2020 (13.02.2020)



(10) International Publication Number
WO 2020/033902 A1

- (51) International Patent Classification:
G06N 20/00 (2019.01)
- (21) International Application Number:
PCT/US2019/046019
- (22) International Filing Date:
09 August 2019 (09.08.2019)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/717,630 10 August 2018 (10.08.2018) US
- (71) Applicant: **VISA INTERNATIONAL SERVICE ASSOCIATION** [US/US]; P.O. Box 8999, San Francisco, California 94128 (US).
- (72) Inventors: **SHI, Yichun**; 900 Metro Center Boulevard, Foster City, California 94404 (US). **BEST-ROWDEN, Lacey**; 1107 Shoreline Drive, San Mateo, California 94404 (US).
- (US). **WAGNER, Kim**; 606 Alberta Avenue, Sunnyvale, California 94087 (US).
- (74) Agent: **RICKETT, Cynthia H.** et al.; Kilpatrick Townsend & Stockton LLP, Mailstop: IP Docketing - 22, 1100 Peachtree Street, Suite 2800, Atlanta, Georgia 30309 (US).
- (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, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH,

(54) Title: TECHNIQUES FOR MATCHING DISPARATE INPUT DATA

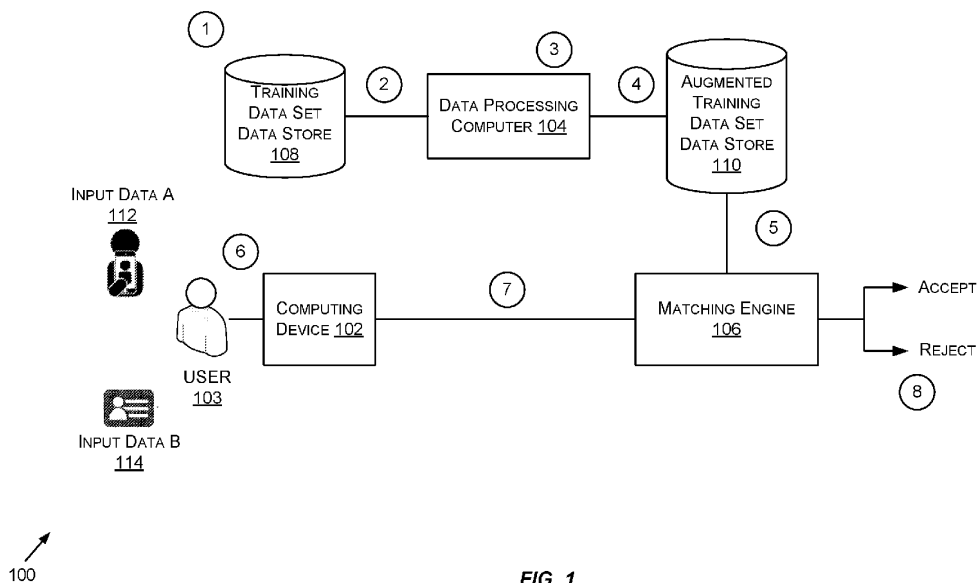


FIG. 1

(57) Abstract: Systems and methods are disclosed for training a generative adversarial network (GAN) to transform images of one type (e.g., a selfie) to images of a second type (e.g., an ID document image). Once trained, the GAN may be utilized to generate an augmented training set that includes pairs of images (e.g., an image of the first type paired with an image of the second type, an image of the second type generated from an image of the first type paired with an image of the second type). The augmented training data set may be utilized to train a matching model to identify when subsequent input images (e.g., a selfie and an ID image, an ID image generated from a selfie and an actual ID image) match.

[Continued on next page]

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 applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *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))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*