



- (51) **International Patent Classification:**
G01N 30/86 (2006.01) *G01N 30/88* (2006.01)
- (21) **International Application Number:**
PCT/US2023/031217
- (22) **International Filing Date:**
28 August 2023 (28.08.2023)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
63/373,850 29 August 2022 (29.08.2022) US
- (71) **Applicant: AMGEN INC.** [US/US]; One Amgen Center Drive, Thousand Oaks, CA 91320-1799 (US).
- (72) **Inventors: PADILLA, Luis, Felipe;** c/o Amgen Inc., One Amgen Center Drive, Mail Stop 28-5-A, Thousand Oaks, CA 91320-1799 (US). **MARIN-HERNANDEZ, Pedro;** c/

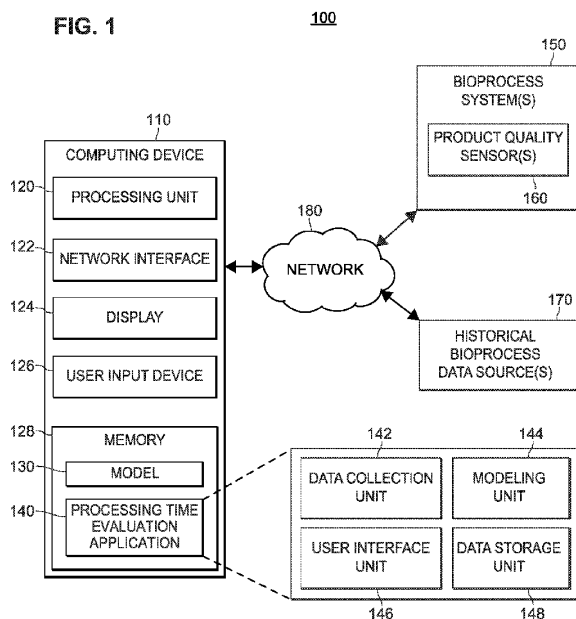
o Amgen Inc., One Amgen Center Drive, Mail Stop 28-5-A, Thousand Oaks, CA 91320-1799 (US).

- (74) **Agent: JACOBSON, Robert, S.; MARSHALL, GERSTEIN & BORUN LLP,** 233 S. Wacker Drive, 6300 Willis Tower, Chicago, IL 60606-6357 (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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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.

- (54) **Title:** PREDICTIVE MODEL TO EVALUATE PROCESSING TIME IMPACTS

FIG. 1



- (57) **Abstract:** Systems and methods for evaluating impacts of processing time of a process (such as a bioprocess) can include (a) obtaining a model trained using historical bioprocess data, (b) determining, by applying input to the model, predicted output that would result when operating the bioprocess in accordance with the input, wherein either: (i) the input includes a processing time and the predicted output includes a product quality, or (ii) the input includes a product quality parameter and the predicted output includes a processing time, and (c) displaying or storing the values of the predicted output. Further aspects include receiving the input as user input from a user. Still further aspects include presenting the predicted output to the user via a graphical user interface.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, ME, 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).

Published:

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