



(51) International Patent Classification:
G06F 19/00 (2006.01)

(21) International Application Number:

PCT/US2009/065789

(22) International Filing Date:

24 November 2009 (24.11.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/118,395 26 November 2008 (26.11.2008) US

(71) Applicant (for all designated States except US): **ILLUMINA, INC.** [US/US]; 9885 Towne Centre Drive, San Diego, CA 92121-1975 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RONAGHI, Mostafa** [SE/US]; 9885 Towne Centre Drive, San Diego, CA 92121 (US). **ELTOUKHY, Helmy, A.** [US/US]; 25861 Industrial Boulevard, Hayward, CA 94545 (US).

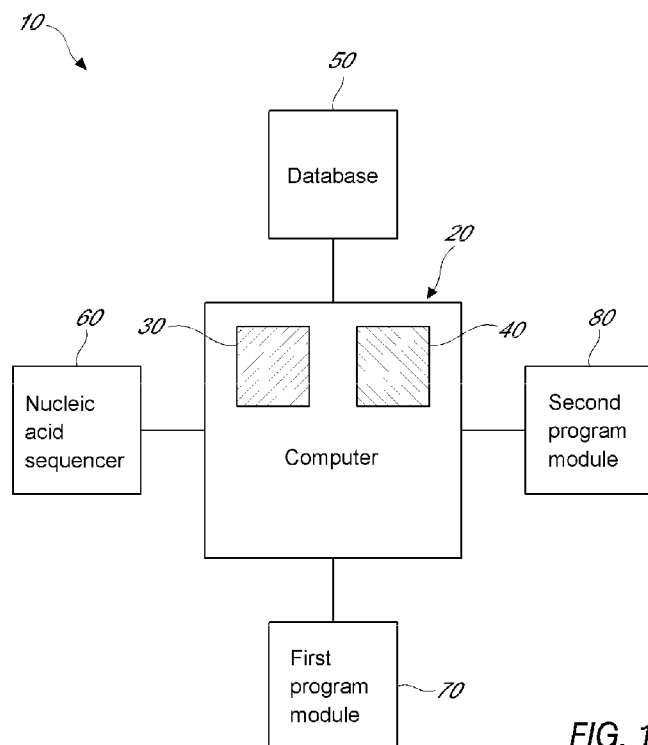
(74) Agent: **HART, Daniel**; Knobbe Martens Olson & Bear LLP, 2040 Main Street, 14th Floor, Irvine, CA 92614 (US).

(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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHODS AND SYSTEMS FOR ANALYSIS OF SEQUENCING DATA



(57) Abstract: The present technology relates to the methods and systems for analysis of sequencing data. In particular, methods and systems for characterizing a target nucleic acid while determining the nucleotide sequence of the target nucleic acid are described. Certain embodiments include methods and systems for identifying the source of a target nucleic acid by comparing the accumulating nucleotide sequence of a target nucleic acid to a population of reference nucleotide sequences.

FIG. 1



Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

— *without international search report and to be republished
upon receipt of that report (Rule 48.2(g))*