



US008768865B2

(12) **United States Patent**  
**Narayanan et al.**

(10) **Patent No.:** **US 8,768,865 B2**  
(45) **Date of Patent:** **Jul. 1, 2014**

(54) **LEARNING SITUATIONS VIA PATTERN MATCHING**

(75) Inventors: **Vidya Narayanan**, San Diego, CA (US);  
**Sanjiv Nanda**, Ramona, CA (US);  
**Fuming Shih**, Cambridge, MA (US)

(73) Assignee: **Qualcomm Incorporated**, San Diego, CA (US)

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 250 days.

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(21) Appl. No.: **13/269,516**

(22) Filed: **Oct. 7, 2011**

(65) **Prior Publication Data**

US 2012/0265717 A1 Oct. 18, 2012

**Related U.S. Application Data**

(60) Provisional application No. 61/434,400, filed on Jan. 19, 2011.

(51) **Int. Cl.**

**G06F 17/20** (2006.01)  
**G01D 15/00** (2006.01)  
**G06N 99/00** (2010.01)

(52) **U.S. Cl.**

CPC ..... **G06N 99/005** (2013.01)  
USPC ..... **706/12; 702/127**

(58) **Field of Classification Search**

None  
See application file for complete search history.

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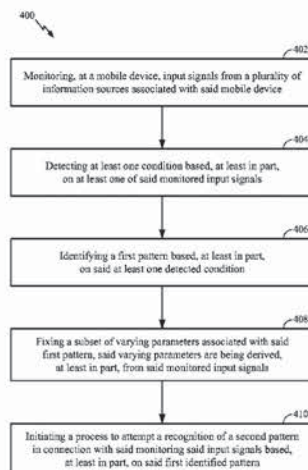
*Primary Examiner* — Alan Chen

(74) *Attorney, Agent, or Firm* — Kilpatrick Townsend & Stockton LLP

(57) **ABSTRACT**

Example methods, apparatuses, or articles of manufacture are disclosed herein that may be utilized, in whole or in part, to facilitate or support one or more operations or techniques for machine learning of situations via pattern matching or recognition.

**53 Claims, 5 Drawing Sheets**



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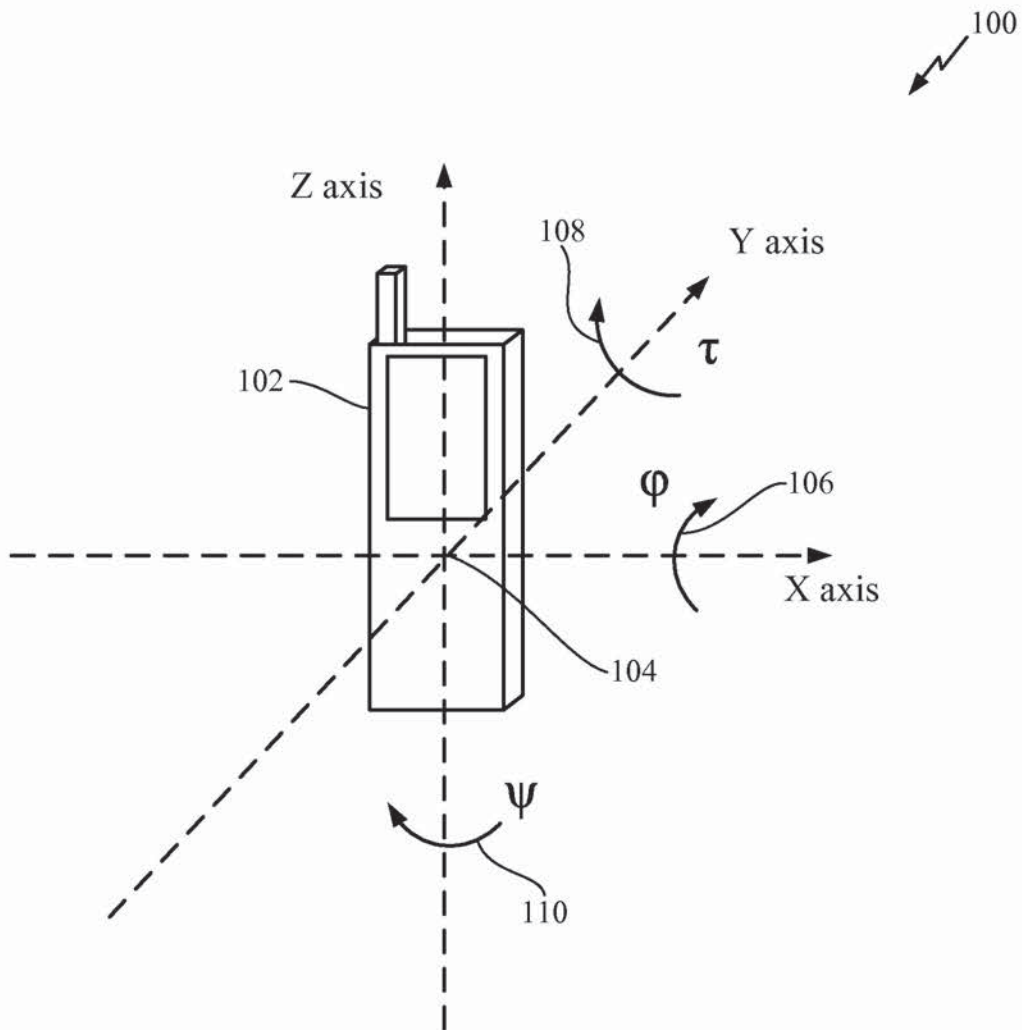


FIG. 1

200

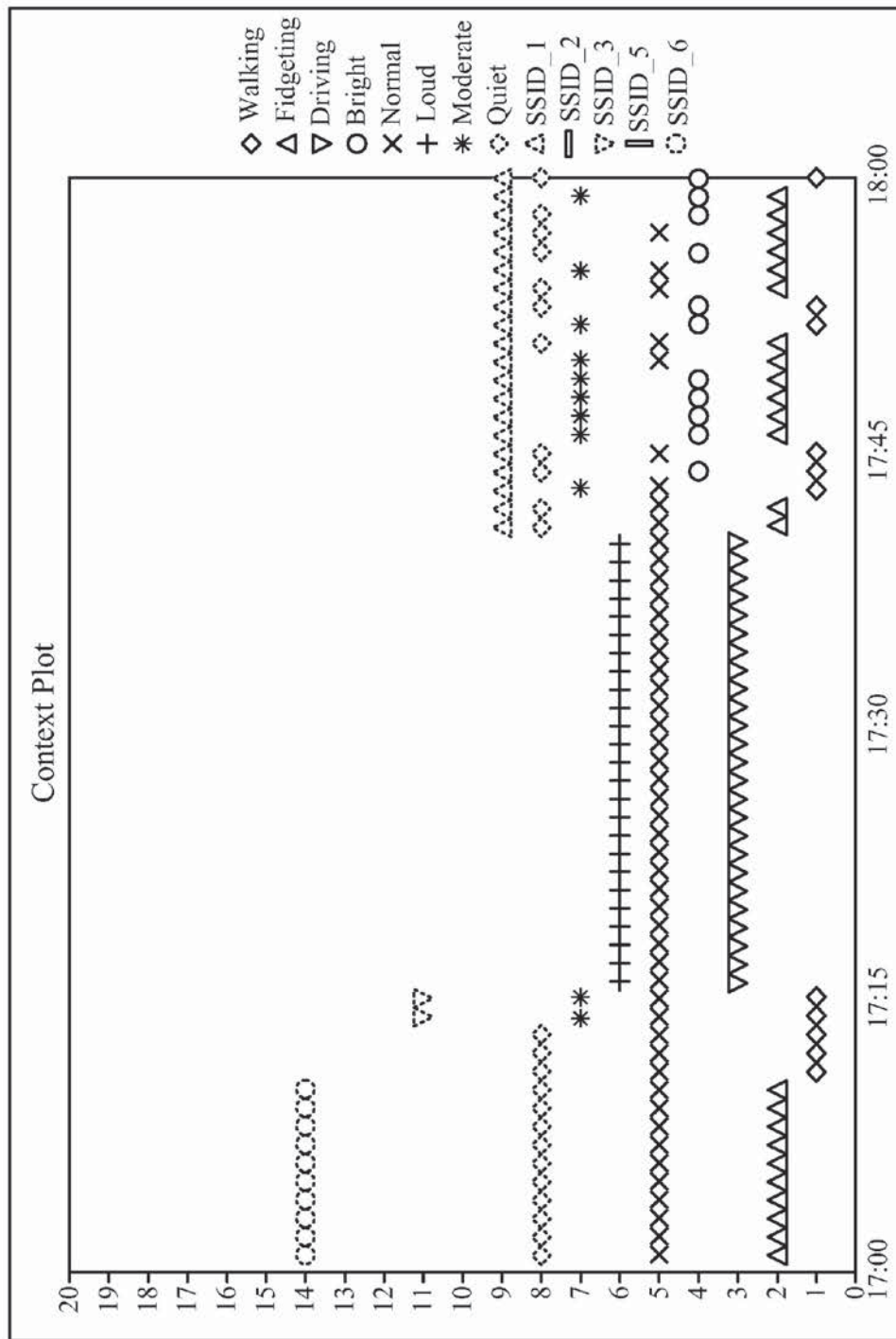


FIG. 2

302 ↗

```

running_in_gym
[running_in_gym
  (?user rdf:type http://xmlns.com/foaf/0.1/Person)
  (?ct0 rdf:type contextInfo#ContextInfo)
  (?ct0 rdf:type contextInfo#ContextName 'Loud')
  (?ct1 rdf:type contextInfo#ContextInfo)
  (?ct1 rdf:type contextInfo#ContextName 'Running')
now(?x)
makeSkolem(?sit, ?x, ?ct0, ?ct1 )
->( ?user situation#inSituation ?sit)
(?sit situation#detectedEventTime ?x)
(?sit situation#relevantContext ?ct0)
(?sit situation#relevantContext ?ct1)
(?sit situation#name 'running_in_gym')
]
Generated Rule

```

300 ↗

```

Found this pattern 5 this week
***** Begin of Pattern *****
[sensor_id: 6
time_stamp: 1281489300000
context_type: "SoundIntensity"
context_value: "Loud"
, sensor_id: 1
time_stamp: 2
context_type: "PeriodicMovement"
context_value: "Running"
value: ""
]
***** End of Pattern *****
What situation is this? : running_in_gym
Pattern

```

FIG. 3

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