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Narayanan et al.

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

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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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(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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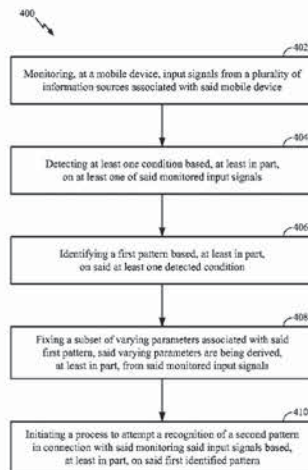
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(57) **ABSTRACT**

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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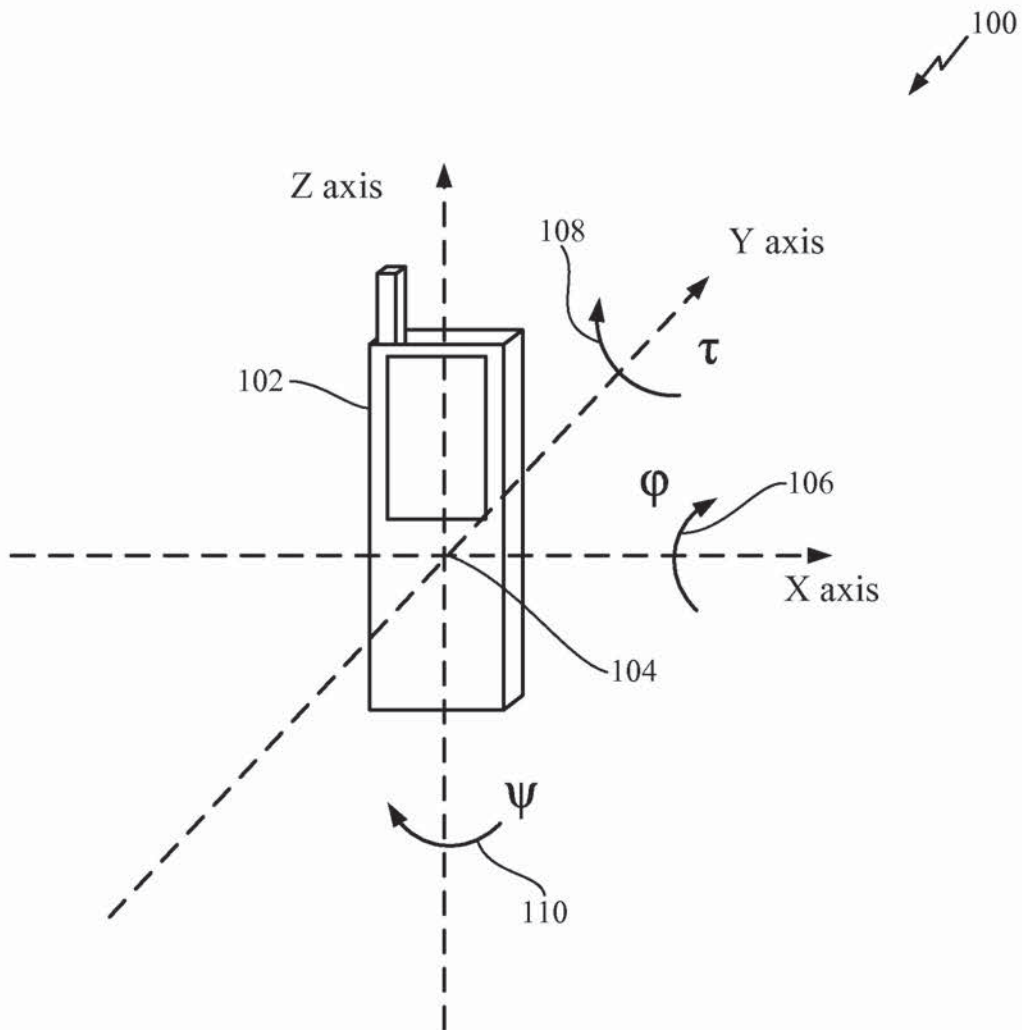


FIG. 1

200

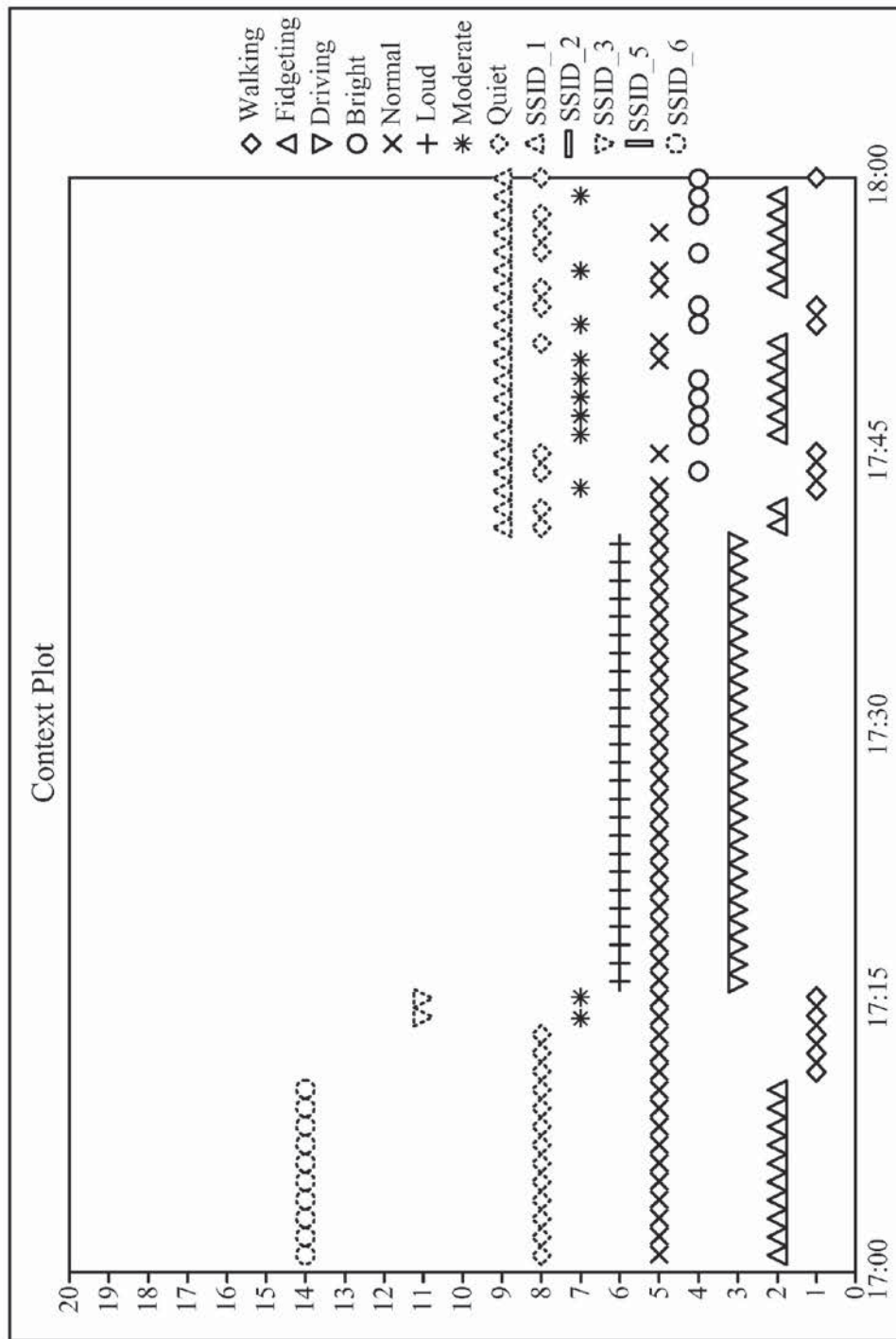


FIG. 2

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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