US #18 Identify Essential Contextual Elements

TASK #17 List all possible contextual elements (time, duration, reason, location, participants, etc.)

Author: Prerana Kumsi
ASU ID: 1233380995

Key Research Questions

How should user context be represented to the LLM (structured vs natural language vs hybrid)?
What level of abstraction (sensor → mid-level → inferred activity) yields the most appropriate responses?
How much context is necessary vs sufficient for high-quality auto-responses?
Does increasing specificity improve clarity or increase privacy risk?
How does context selection affect hallucination or over-speculation?

Temporal Context

- Current time
- Time of day (morning/night)
- Day of week
- Date
- Time zone
- Duration of current activity
- Start time of activity
- End time of activity
- Time since last phone use
- Deadline proximity
- Recurring vs one-time event

Location Context

- GPS location
- Semantic location label (home, work, library)
- Specific room (bedroom, meeting room)
- Indoor vs outdoor
- Moving vs stationary
- Commute/travel state

- Country/region

Activity Context

- Sleeping
- In a meeting
- In class
- Studying
- Driving
- Exercising
- Cooking
- On a call
- Social event
- Focus/deep work mode
- Emergency
- Idle/free

Social / Participant Context

- Who is contacting (friend, boss, family)
- Relationship strength
- Sender priority
- Number of participants in current activity
- Role in meeting (host, attendee)
- Authority present (professor, manager)

Reason / Intent Context

- Why unavailable
- Urgency of incoming message
- Message topic (work/personal)
- Expected response time
- Required response complexity

Device Context

- Screen locked/unlocked
- Phone in silent/vibrate mode
- Battery level
- Network connectivity
- Headphones connected
- App currently active

- Number of unread notifications
- Time since last unlock

Environmental Context

- Noise level
- Light level
- Weather conditions
- Crowd density

Behavioral / Historical Context

- Typical response time
- Past interaction patterns
- Frequently auto-responded contacts
- User personalization preferences

Privacy & Sensitivity Context

- Sensitivity of location
- Confidential meeting status
- User-defined sharing rules
- Data minimization settings