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Task-oriented Conversational Agent for Mental Health Resources

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What?

- Task-oriented conversational agent
- Input: text from user, containing a mental health related issue
 - E.g. “Lately I feel that my workload has become too much to handle, and I wake up more and more tired every day.”
- Output:
 - Questions for more specificity:
 - *Where do you live?* → establish location
 - Repetitive: *Do you feel as if your workload makes you more tired?* → narrow down the problem
 - **Resources**
 - Psychologist, job coach, therapist, hospital, ... in the area
 - Advice: *You should contact the police.*

Why?

- Mental health
 - **COVID19:** “[...] Measures such as self-isolation and quarantine have affected usual activities, routines, and livelihoods of people that may lead to an increase in loneliness, anxiety, depression, insomnia, harmful alcohol, and drug use, and self-harm or suicidal behavior.” (Kumar et al. 2020; World Health Organization 2021)
- **Threshold** for looking for help often too high: uncertain if and where to start or who to consult

How?

- Data collection (!)
 - MultiWoz (Budzianowski et al. 2018)
 - Human-human written conversations spanning over multiple domains and topics
 - 10, 438 dialogues
 - Geographical data on resources (Google Maps, web site information)

How?

Intent detection → action (reply) → goal

(Duvenhage 2018)

- Response template
 - User: *I feel depressed lately.*
 - Template: *Do you need help in solving your < INSERT >?*
 - CA: *Do you need help in solving your < depressed feeling >?*
- ConveRT model (Conversational Representations from Transformers) (Buhmann 2020)
- Naïve Bayes text classifier (supervised) + Reinforcement Learning
- More research

References

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