

9-2019

# amazon alexa + linked open data: theorizing concerning relationships between (surveillant) smart-home voice assistants and linked open data

Michelle Nitto  
*CUNY Central*

## How does access to this work benefit you? Let us know!

Follow this and additional works at: [https://academicworks.cuny.edu/oa\\_pubs](https://academicworks.cuny.edu/oa_pubs)

 Part of the [Artificial Intelligence and Robotics Commons](#), and the [Databases and Information Systems Commons](#)

---

### Recommended Citation

Nitto, Michelle, "amazon alexa + linked open data: theorizing concerning relationships between (surveillant) smart-home voice assistants and linked open data" (2019). *CUNY Academic Works*.  
[https://academicworks.cuny.edu/oa\\_pubs/13](https://academicworks.cuny.edu/oa_pubs/13)

This Article is brought to you for free and open access by the CUNY Central Office at CUNY Academic Works. It has been accepted for inclusion in Publications and Research by an authorized administrator of CUNY Academic Works. For more information, please contact [AcademicWorks@cuny.edu](mailto:AcademicWorks@cuny.edu).

# amazon alexa + linked open data:

theorizing concerning relationships between (surveillant)  
smart-home voice assistants and linked open data

by Michelle Nitto

# (1) how does Alexa (technically) work?

- “wake word” + voice recordings in the cloud
- voice interaction requires: alexa skill + amazon lambda
- AWS server (smart home skill adapter)
- Alexa skills (90,000+ as of 2018)

(2) yes, Alexa is probably always listening  
(or is technically able to).



screenshot of google search "is alexa always listening" 9/9/2019

(3) “amazon alexa & the aesthetics of whiteness”  
(Phan, 2019)



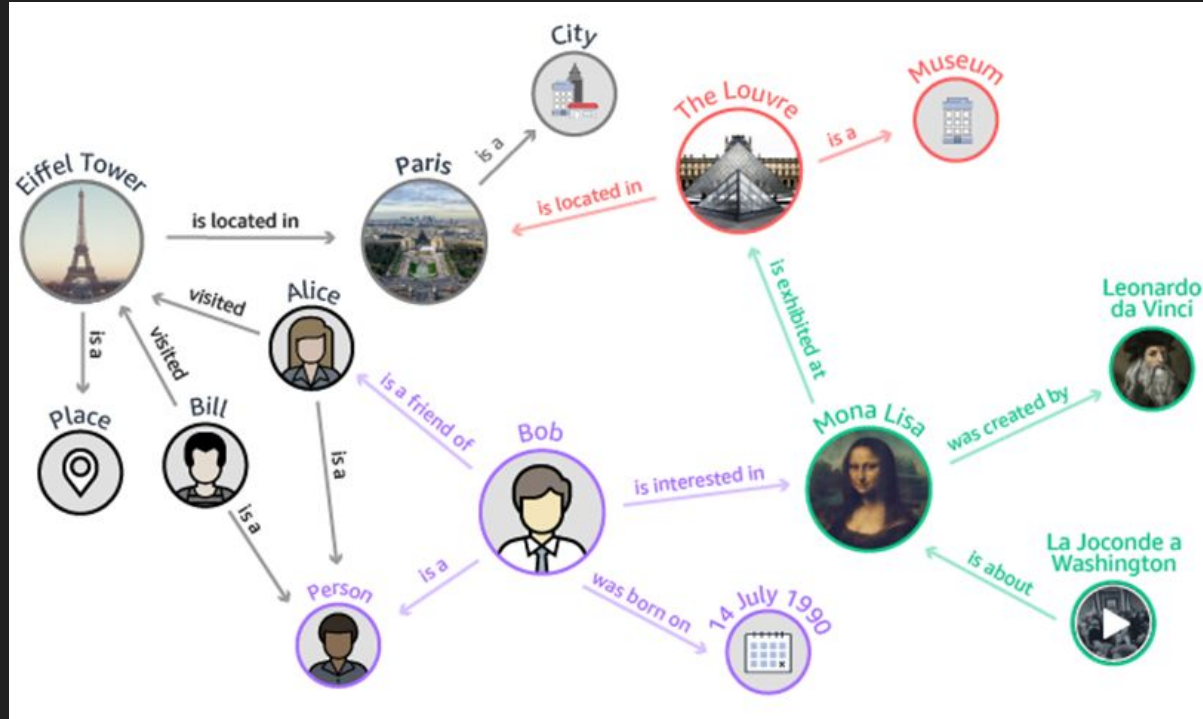
“All the user need do is ask  
and the white-voice delivers.”  
(Phan, 2019, p. 30)

## (4) conversational AI + linked open data (LOD)

**linked open data:** structured and machine readable data released under an open license.

- Transliteration capabilities + language pairs in wikidata
- Alexa Prize for open domain dialog (using LOD)

# (5) amazon metaphacts - knowledge graph



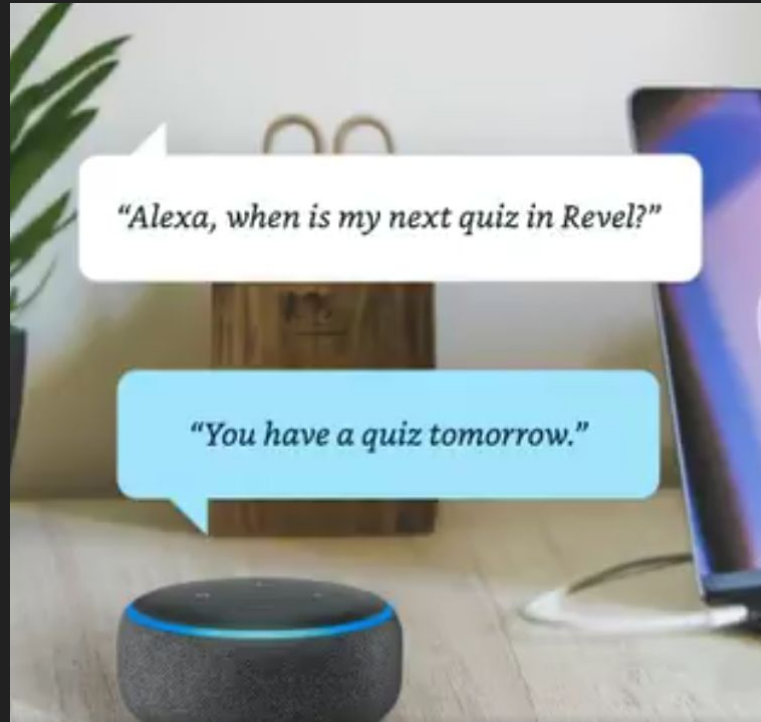
Sengupta, K. (2019) "Exploring Knowledge Graphs on Amazon Neptune Using Metaphactory." *AWS Partner Network (APN) Blog*.

## (6) amazon alexa + healthcare industry

- Alexa skills kit + patient health records (HIPAA)
- Voice monitoring via audio interruptions
- Healthcare companies + surveillance of workers



## (7) education: amazon "revel" skill (Pearson)



## (8) discussion

- ★ What effects could amazon alexa pairing with textbook publishers have on library collections & services?
- ★ How is amazon's usage of linked open data for Alexa's skills and services at odds with ethical open access to knowledge?
- ★ Does amazon developer's usage of linked open data remind you of any other commercial entity extracting publicly licensed information for profit?

## (9) works cited:

- Hasse, P. (2017). "Alexa, ask wikidata! Voice interaction with knowledge graphs using Amazon Alexa" *International Semantic Web Conference*.
- Khatri, C. (2018). "Advancing the state of the art in open domain dialog systems through the alexa prize" *2nd Proceedings of Alexa Prize*.
- Lei, X. et al. (2018). "The Insecurity of Home Digital Voice Assistants - Amazon Alexa as a Case Study." *arXiv*.
- Lopatovska, I. et al. (2018). "Talk to me: Exploring user interaction with the Amazon Alexa." *Journal of Librarianship and Information Science*.
- Merhav, Y. & Ash, S. (2018). "Design challenges in named entity transliteration" *Proceedings of the 27th International Conference on Computational Linguistics*.
- Rae-Dupree, Janet (2019). "Health: Protection vs. privacy: How much info should 'Doctor Alexa' have access to?" *Palm Beach Post*.
- Simonite, T. & Gross, T. (2019). "Encyclopedia Automata" *Wired*.
- Sengupta, K. (2019) "Exploring Knowledge Graphs on Amazon Neptune Using Metaphactory." *AWS Partner Network (APN) Blog*.
- Simonite, T. & Gross, T. (2019). "Encyclopedia automata" *Wired*.