

Odor-based authentication and identification

Project Group “Praxis der Forschung”
Summer Term 2022

Project

Researchers revealed the feasibility of using human odor as a unique biometric to identify people. This seminar work aims to research, categorize, and analyze works dealing with odor, especially authentication and identification papers.

Contact

- Matin Fallahi <matin.fallahi@kit.edu>
- Simon Hanisch <simon.hanisch@kit.edu>

References

- [1] Bin Yang and Wonjun Lee. “Human Body Odor Based Authentication Using Machine Learning”. In: *Symposium Series on Computational Intelligence, SSCI 2018, Bangalore, India, November 18-21, 2018*. IEEE, 2018, pp. 1707–1714. DOI: [10.1109/SSCI.2018.8628697](https://doi.org/10.1109/SSCI.2018.8628697).
- [2] Chatchawal Wongchoosuk, Taweesak Youngrod, Hirihattaya Phetmung, Mario Lutz, Theeraporn Puntheeranurak, and Teerakiat Kerdcharoen. “Identification of people from armpit odor region using networked electronic nose”. In: *Defense Science Research Conference and Expo (DSR)*. 2011, pp. 1–4. DOI: [10.1109/DSR.2011.6026826](https://doi.org/10.1109/DSR.2011.6026826).
- [3] Shoffi Izza Sabilla, Malikhah, and Riyanarto Sarno. “Classification and Gas Concentration Measurements of Human Axillary Odor using Electronic Nose”. In: *13th International Conference on Information Communication Technology and System (ICTS)*. 2021, pp. 161–166. DOI: [10.1109/ICTS52701.2021.9608597](https://doi.org/10.1109/ICTS52701.2021.9608597).
- [4] Wenwen Hu, Liangtian Wan, Yingying Jian, Cong Ren, Ke Jin, Xinghua Su, Xiaoxia Bai, Hossam Haick, Mingshui Yao, and Weiwei Wu. “Electronic noses: from advanced materials to sensors aided with data processing”. In: *Advanced Materials Technologies* 4.2 (2019).
- [5] Piotr Borowik, Leszek Adamowicz, Rafal Tarakowski, Krzysztof Siwek, and Tomasz Grzywacz. “Odor Detection Using an E-Nose With a Reduced Sensor Array”. In: *Sensors* 20.12 (2020), p. 3542. DOI: [10.3390/s20123542](https://doi.org/10.3390/s20123542).
- [6] Lu Cheng, Qing-Hao Meng, Achim J Lilienthal, and Pei-Feng Qi. “Development of compact electronic noses: a review”. In: *Measurement Science and Technology* 32.6 (2021). DOI: [10.1088/1361-6501/abef3b](https://doi.org/10.1088/1361-6501/abef3b).