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# Review on the Types of Sensors Embedded in Smartphone

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**Abstract:** Sensors can be found in almost any application. It can be found in almost any application, where data from the real world is used to make decisions in many ways. Recent developments have transformed mobile phones from simple means of communication into fully integrated devices using new technologies and services. Most systems use sensors for successful automated data collection. Due to the use of sensors in mobile phones, today's mobile phones are equipped with many sensors and new sensors will be added in the future. There are many reasons for the integration of sensors and mobile devices, including ease of use, cost reduction and high productivity. This article provides an overview of mobile phone integration, sensor taxonomy, describes the number of sensors found and emerging in mobile phones, and highlights some of the limitations and recommendations to be made by researchers..

## Keywords: Sensors

### REFERENCES

- [1] N. D. Lane, E. Miluzzo, H. Lu, D. Peebles, T. Choudhury, and A. T. Campbell, "A survey of mobile phone Sensing," IEEE Communications magazine, vol. 48, no. 9, pp. 140–150, 2010.
- [2] Barton, J. J., Z. Shumin and S. B. Cousins. Mobile Phones Will Become The Primary Personal Computing Devices. In Proc. 7 th IEEE Workshop on Mobile Computing and Systems and Applications (WMCSA), 3-9 (2006).
- [3] Kansal, A., M. Goraczko and F. Zhao. Building a sensor network of mobile phones. In Proc. 6th International Conference on Information Processing in Sensor Networks (ICIPSN), 547-548 (2007).
- [4] Grauballe, A., G. P. Perrucci and F. H. P. Fitzek. Introducing Contextual Information to Mobile Phones by External and Embedded Sensors. In Proc. International Workshop on Mobile Device and Urban Sensing (MODUS), (2008).
- [5] Schmidt, A. and K. V. Laerhoven. How to build smart appliances. IEEE Personal Communications, 8:66-71 (2001).
- [6] Wong, A. K. Y. Cell Phones as Mobile Computing Devices. IT Professional, 12: 40-45 (2010).
- [7] Akyildiz, I. F., W. Su, Y. S. Subramaniam and E. Cayirci. Wireless Sensor Networks: A Survey. Computer Networks, 38: 393-422 (2002).
- [8] Chen, Z. and C. Lu. Humidity Sensors: A Review of Materials and Mechanisms. Sensor Letters, 3: 274-295 (2005).
- [9] Chun, B.G. and P. Maniatis. Augmented Smartphone Applications Through Clone cloud Execution. In Proc. 12th International Conference on Hot Topics in Operating Systems (ICHTOS), 8-8 (2009).
- [10] Chun, B.G. and P. Maniatis. Dynamically Partitioning Applications Between Weak Devices and Clouds. In Proc. 1st ACM Workshop on Mobile Cloud Computing & Services: Social Networks and Beyond, 1-5 (2010).
- [11] Culler, D., D. Estrin and M. Srivastava. Guest Editors' Introduction: Overview of Sensor Networks. Computer, 37:41-49 (2004). [12] Ganesan, D., A. Cerpa, W. Ye, Y. Yu, J. Zhao and D. Estrin. Networking Issues in Wireless Sensor Networks. Journal of Parallel and Distributed Computing, 64: 799-814 (2004).

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- [13] Leichtenstern, K., A. D. Luca and E. Rukzio. Analysis of Built-in Mobile Phone Sensors for Supporting Interactions with the Real World. In Proc. Pervasive 2005 Workshop on Pervasive Mobile Interaction Devices (PERMID), 31-34 (2005).
- [14] Manikandan, E., K. A. Karthigeyan and K. I. A. Micro Electro Mechanical System (MEMS) based Pressure Sensor in Barometric Altimeter. International Journal of Scientific and Engineering Research, 2: 1-8 (2011).
- [15] Neuvo, Y. Future Directions in Mobile Communications. In Proc. 22nd European 400 Solid-State Circuits Conference (ESSCIRC), 35-39 (1996).
- [16] Zander, S. and B. Schandl. A Framework for Contextdriven RDF Data Replication on Mobile Devices. In Proc.6 th International Conference on Semantic Systems (I-Semantics), 1-5 (2010).
- [17] Perera C, Zaslavsky A, Christen P, Salehi A, Georgakopoulos D (2012) Capturing sensor data from mobile Phones using global sensor network middleware. In: 23rd International Symposium on Personal Indoor And Mobile Radio Communications (PIMRC), (pp. 24-29). IEEE.
- [18] Zhi-An Y, Chun-Miao M (2012) The development and application of sensor based on android. In: 8th International Conference on Information Science and Digital Content Technology (ICIDT), (Vol. 1, pp. 231-234). IEEE.
- [19] L. Mainetti, L. Patrono, and A. Vilei, "Evolution of wireless sensor networks towards the Internet of things: A Survey," in SoftCOM 2011, 19th International Conference on Software, Telecommunications and Computer Networks, pp. 1–6, Split, Croatia, 2011.
- [20] R. Nandakumar, S. Gollakota, and N. Watson, "Contactless sleep apnea detection on smartphones," in MobiSys '15 Proceedings of the 13th Annual International Conference on Mobile Systems, Applications, And Services, pp. 45–57, Florence, Italy, May 2015.
- [21] M. Liu, "A study of mobile sensing using smartphones," International Journal of Distributed Sensor Networks, vol. 9, no. 3, Article ID 272916, 2013.
- [22] S. Shigematsu, H. Morimura, Y. Tanabe, T. Adachi, and K. Machida, "A single-chip fingerprint sensor and Identifier," IEEE Journal of SolidState Circuits, vol. 34, no. 12, pp. 1852–1859, 1999.
- [23] M. Tartagni and R. Guerrieri, "A fingerprint sensor based on the feedback capacitive sensing scheme," IEEE Journal of Solid-State Circuits, vol. 33, no. 1, pp. 133–142, 1998.
- [24] X. Su, H. Tong, and P. Ji, "Activity recognition with smartphone sensors," Tsinghua Science and Technology, vol. 19, no. 3, pp. 235–249, 2014.
- [25] G. Kambourakis, D. Damopoulos, D. Papamartzivanos, and E. Pavlidakis, "Introducing touchstroke: Keystroke-based authentication system for smartphones," Security and Communication Networks, vol. 9, no. 6, 554 pages, 2016.
- [26] N. Al-Naffakh, N. Clarke, and F. Li, "Continuous user authentication using smartwatch motion sensor Data," in Trust Management XII. IFIPTM 2018, IFIP Advances in Information and Communication Technology, N. Gal-Oz and P. Lewis, Eds., pp. 15–28, 2018.

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