

# User Interface Design



Source : Britannica ImageQuest

---

User Interface Design (UI) takes into consideration user needs and ensures that interface possesses the elements that maximize the usability and enhances the user experience. The last decade had seen tremendous advancements to mobile user interface resulting in very friendly and useful apps. Besides a good graphic design and typography, the developers continue to leverage on rigorous processes such as rapid prototyping to meet the needs of the users. This reading list contains articles and books published in the last 5 years.

The Library will periodically add new resources to this list. Links to the full text are indicated via the hyperlinks. If you encounter any problem in retrieving the materials, please contact [library@sutd.edu.sg](mailto:library@sutd.edu.sg) for assistance. Please also forward us titles that you would like to share with others on the list.

## User Interface Design

### Contents

- [Biomedical](#)
- [Home Devices](#)
- [Mobile Devices](#)
- [Prototyping](#)
- [Special Needs](#)
- [Travel](#)
- [Virtual reality](#)

# Biomedical

User interfaces for portable or non-portable Medical devices as well as healthcare applications.

[Alnanih, R., & Ormandjieva, O. \(2016\). Mapping HCI Principles to Design Quality of Mobile User Interfaces in Healthcare Applications. \*Procedia Computer Science\*, 94, 75-82. doi: <http://dx.doi.org/10.1016/j.procs.2016.08.014>](#)

[Hagedorn, Krishnamurty, & Grosse. \(2016\). An information model to support user-centered design of medical devices. \*Journal of Biomedical Informatics\*, 62, 181-194.](#)

[Luna, Rizzato Ledo, Otero, Risk, & González Bernaldo de Quirós. \(2017\). User-centered design improves the usability of drug-drug interaction alerts: Experimental comparison of interfaces. \*Journal of Biomedical Informatics\*, 66, 204-213.](#)

[Back to Top](#)

# Home Devices

In order to control the energy consumption, Tangible Augmented Reality (TAR) technique were used as form of usability testing. Graphing software such as Highcharts and web technologies AJAX provides an easy to use visual monitoring system pave the direction for effective smart home system.

[Ceccacci, S., Germani, M., & Mengoni, M. \(2013\). A Method to Design a Smart Home Interface. In M. Abramovici & R. Stark \(Eds.\), \*Smart Product Engineering: Proceedings of the 23rd CIRP Design Conference, Bochum, Germany, March 11th - 13th, 2013\* \(pp. 915-925\). Berlin, Heidelberg: Springer Berlin Heidelberg.](#)

[Fletcher, J., & Malalasekera, W. \(2016\). Development of a user-friendly, low-cost home energy monitoring and recording system. \*Energy\*, 111, 32-46. doi: <https://doi.org/10.1016/j.energy.2016.05.027>](#)

[Back to Top](#)

# Mobile Devices

The use of design patterns, robust eye-gaze system without any hand motion and RemoteUI where a combination of thin client computing and widget based UI systems are some of the areas to enhance the user interface.

[Al-Samarraie, H., & Ahmad, Y. \(2016\). Use of Design Patterns According to Hand Dominance in a Mobile User Interface. \*Journal of Educational Computing Research\*, 54\(6\), 769-792. doi: \[doi:10.1177/0735633116632359\]\(https://doi.org/10.1177/0735633116632359\)](#)

[Iqbal, Hwaran Lee, & Soo-Young Lee. \(2013\). Smart user interface for mobile consumer devices using model-based eye-gaze estimation. \*Consumer Electronics, IEEE Transactions on\*, 59\(1\), 161-166.](#)

[Mendoza, A. \(2013\). \*Mobile User Experience Patterns to Make Sense of it All\*. Burlington: Elsevier Science.](#)

[Thommes, Gerlicher, Qi Wang, & Grecos. \(2012\). RemoteUI: A high-performance remote user interface system for mobile consumer electronic devices. \*Consumer Electronics, IEEE Transactions on\*, 58\(3\), \*IEEE Transactions on Consumer Electronics\*, August 2012, Vol.58\(3\).](#)

[Back to Top](#)

# Prototyping

Development technique where the mock-up for the user design are used to determine whether it will meet the requirements.

[Graziosi, S., Ferrise, F., Phillips Furtado, G., & Bordegoni, M. \(2014\). Reverse engineering of interactive mechanical interfaces for product experience design. \*Virtual and Physical Prototyping\*, 1-15.](#)

[Snyder, C. \(2003\). \*Paper Prototyping : The Fast and Easy Way to Design and Refine User Interfaces\*. San Francisco, Calif: Morgan Kaufmann.](#)

[Back to Top](#)

# Special Needs

User interfaces for people with special needs such autistic children and physically impaired individuals.

[Lubas, M., Mitchell, J., & De Leo, G. \(2014\). User-Centered Design and Augmentative and Alternative Communication Apps for Children With Autism Spectrum Disorders. \*SAGE Open\*, 4\(2\), SAGE Open, 2014, Vol.4\(2\).](#)

[Miñón, R., Paternò, F., Arrue, M., & Abascal, J. \(2016\). Integrating adaptation rules for people with special needs in model-based UI development process. \*Universal Access in the Information Society\*, 15\(1\), 153-168. doi: 10.1007/s10209-015-0406-3](#)

[Back to Top](#)

# Travel

A travel app needs to be appealing and intuitive to use, as the user needs to plan vacations by booking flights, accommodation and other activities.

[Lalicic, L., & Dickinger, A. An assessment of user-driven innovativeness in a mobile computing travel platform. \*Technological Forecasting and Social Change\*. doi: <https://doi.org/10.1016/j.techfore.2017.02.024>](#)

[Fang, Zhao, Wen, & Wang. \(2017\). Design and performance attributes driving mobile travel application engagement. \*International Journal of Information Management\*, 37\(4\), 269-283.](#)

[Back to Top](#)

# Virtual reality

User interface involving depth, moving interface, motion flow are the some of the key elements of a VR UI.

[Davis, M. M., Gabbard, J. L., Bowman, D. A., & Gracanin, D. \(2016, 19-23 March 2016\). Depth-based 3D gesture multi-level radial menu for virtual object manipulation. Paper presented at the 2016 IEEE Virtual Reality \(VR\).](#)

[Su, K., Wang, H., Wu, Y., & Kuo, N. \(2013\). The Interface Design and Usability Evaluation of Interactive Virtual Reality Navigation System. \*Applied Mechanics and Materials\*, 302, 635-639.](#)

[Wang, & Lindeman. \(2015\). Coordinated hybrid virtual environments: Seamless interaction contexts for effective virtual reality. \*Computers & Graphics\*, 48, 71-83.](#)

[Back to Top](#)