# Topics

| Title | Session | Group | Topic | references | Student |
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| TUIs in virtual and real environments | session 1 | G1 | Graspable User Interfaces | 1. G. W. Fitzmaurice, and W. Buxton. An Empirical Evaluation of Graspable User Interfaces:<br>towards specialized, space-multiplexed input<br>2. G. W. Fitzmaurice, H. Ishii, and W. Buxton, "Bricks: Laying the foundations<br>for graspable user interfaces," in Proceedings of CHI95, pp. 442–449, NY:<br>ACM, 1995 | von Niebelschütz |
| | session 1 | G2 | TUI - connecting objects and surfaces with digital data | 1. Ishii: tangible bits<br>2. W. E. Mackay and A.-L. Fayard, "Designing interactive paper: Lessons from<br>three augmented reality projects," in Proceedings of IWAR98, International<br>Workshop on Augmented Reality, Natick, MA, 1999. | |
| | session 1 | G3 | Tangible Augmented Reality: combining tangible input with augmented reality output | 1. G. A. Lee, C. Nelles, M. Billinghurst, and G. J. Kim, "Immersive authoring<br>of tangible augmented reality applications," in Proceedings of IEEE/ACM<br>International Symposium on Mixed and Augmented Reality, pp. 172–181, IEEE Computer Society, 2004.<br>2. M. Billinghurst, H. Kato, and I. Poupyrev, "The MagicBook — Moving seamlessly between reality and virtuality," IEEE Computer Graphics and Applications, pp. 1–4, May/June 2001. | Zeblin |
| | session 1 | G4 | Tangible Tabletop Interaction: combining interaction techniques and technologies of interactive multi-touch surfaces and TUIs | 1. L. Terrenghi, D. Kirk, H. Richter, S. Kr¨amer, O. Hilliges, and A. Butz, "Physical handles at the interactive surface: Exploring tangibility and its benefits,"<br>in Proceedings of AVI 2008, pp. 138–145, NY: ACM, 2008.<br>2. M.Weiss et al.: "SLAP Widgets: Bridging the gap<br>Between Virtual and Physical Controls on Tabletops,"<br>Proc. CHI 2009, pp. 481 - 490, 2009. | Hauser |

| Application Domains of TUIs | session 2 | G5 | Application Domains: TUIs for Learning | 1. H. S. Raffle, A. J. Parkes, and H. Ishii, "Topobo: A constructive assembly system with kinetic memory," in Proceedings of the ACM CHI'04, pp. 647–654, NY: ACM, 2004.<br>2. J. Underkoffler and H. Ishii, "Illuminating light: An optical design tool with a luminous-tangible interface," in Proceedings of CHI98, pp. 542–549, NY: ACM, 1998. | Weiß |
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| | session 2 | G6 | Application Domains: Problem Solving and Planning | 1. J. Patten and H. Ishii, "Mechanical constraints as computational constraints in tabletop tangible interfaces," in Proceedings of CHI'07, pp. 809–818, NY: ACM, 2007.<br>2. E. Schweikardt, N. Elumeze, M. Eisenberg, and M. D. Gross, "A tangible construction kit for exploring graph theory," in Proceedings of TEI '09, pp. 373–376, NY: ACM, 2009. | Zollner |
| | session 2 | G7 | Application Domains: Tangible Programming: | 1. H. Suzuki and H. Kato, "AlgoBlock: A tangible programming language, a tool for collaborative learning," in Proceedings of the 4th European Logo conference (Eurologo93), pp. 297–303, Athens, Greece, 1993.<br>2. K. Sch¨afer, V. Brauer, and W. Bruns, "A new approach to human-computer interaction — Synchronous modeling in real and virtual spaces," in Proceedings of DIS 1997, pp. 335–344, NY: ACM, 1997. | Klose |
| | session 2 | G8 | Application Domains: Entertainment, play and Edutainment | 1. E. van Loenen, T. Bergman, V. Buil, K. van Gelder, M. Groten, G. Hollemans, J. Hoonhout, T. Lashina, and S. van de Wijdeven, "EnterTaible: A solution for social gaming experiences," in Tangible Play: Research and Design for Tangible and Tabletop Games, Workshop at the 2007 Intelligent User Interfaces Conference, pp. S. 16–19, Honolulu, Hawaii, USA, 2007.<br>2. J. Leitner, M. Haller, K. Yun, W. Woo, M. | Wroblewska |

| | | | | Sugimoto, and M. Inami, "IncreTable, a mixed reality tabletop game experience," in Proceedings of the 2008 International Conference on Advances in Computer Entertainment Technology, pp. 9–16, NY: ACM, 2008. | |
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| Application Domains of TUIs continued | session 3 | G9 | Application Domains: Music and Performance: | 1. J. Patten, B. Recht, and H. Ishii, "Audiopad: A tag-based interface for musical performance," in Proceedings of the International Conference on New Interface for Musical Expression NIME02, pp. 24–26, 2002<br>2. S. Jord`a, G. Geiger, M. Alonso, and M. Kaltenbrunner, "The reacTable: Exploring the synergy between live music performance and tabletop tangible interfaces," in Proceedings of TEI '07, pp. 139–146, NY: ACM, 2007. | Schefner |
| | session 3 | G10 | Application Domains: Musical Composition | 1. Theophanis Tsandilas et al. : Musink: composing music through augmented drawing<br>2. Chen-Wei Chiang et al. : Birds on Paper: An Alternative Interface to Compose Music by Utilizing Sketch Drawing and Mobile Device | Schell |
| | session 3 | G11 | Application Domains: Social communication | 1. S. Greenberg and H. Kuzuoka, "Using digital but physical surrogates to mediate awareness, communication and privacy in media spaces," Personal Technologies, vol. 4, no. 1, Elsevier, January 2000.<br>2. J. J. Kalanithi and V. M. Bove, "Connectibles: Tangible social networks," in Proceedings of TEI08, pp. 199–206, NY: ACM, 2008. | Danqing |
| | session 3 | G12 | Application Domains: Information Visualization | 1. N. Couture, G. Rivi`ere, and P. Reuter, "GeoTUI: A tangible user interface for geoscience," in Proceedings of TEI08, pp. 89–96, NY: ACM, 2008.<br>2. K. Hinckley, R. Pausch, J. Goble, and N. Kassel, "Passive real-world interface props for neurosurgical visualization," in Proceedings of CHI94, pp. 452–458, NY: ACM, 1994. | Draxler |
| Embodied Interaction | session 4 | G13 | Embodied user interfaces: computation embedded and | 1. D. Fallman, "Wear, point and tilt: Designing support for mobile service and maintenance in | Pfab |

| | | | embodied in physical devices | industrial settings," in Proceedings of DIS2002, pp. 293–302, NY: ACM, 2002.<br>2. K. P. Fishkin, A. Gujar, B. L. Harrison, T. P. Moran, and R. Want, "Embodied user interfaces for really direct manipulation," Communications of the ACM, vol. 43, no. 9, pp. 75–80, 2000. | |
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| | session 4 | G14 | Embodiment and Phenomenology | 1. Klemmer et al.: How Bodies Matter: Five Themes for Interaction Design<br>2. Jacob et al. "Reality-based interaction: a framework for post-WIMP interfaces" | Krottenthaler |
| | session 4 | G15 | Body-centric Interaction | 1. Shoemaker et al.: Body-Centric Interaction Techniques for Very Large Wall Displays (NordiCHI 2010)<br>2. Wagner et al.: A Body-centric Design Space for Multi-surface Interaction (CHI 2013) | Molocea |
| | session 4 | G16 | on-body interaction | 1. Lin et al: PUB - Point Upon Body: Exploring Eyes-Free Interaction and Methods on an Arm. UIST '11<br>2. Harrison et al.: On-body interaction: armed and dangerous, in Proceedings TEI'12, p. 69-76 | Körner |
| Theoretical Frameworks: descriptive, predictive and generative power | session 5 | G17 | Frameworks for post-WIMP interfaces: | 1. Beaudouin-Lafon et al.: Designing Interaction, not Interfaces<br>2. Beaudouin-Lafon et al.: Instrumental Interaction: An Interaction Model for Designing Post-WIMP User Interfaces | Habersack |
| | session 5 | G18 | Classification of TUIs | 1. B. Ullmer, H. Ishii, and R. Jacob, "Token+constraint systems for tangible interaction with digital information," ACM Transactions on ComputerHuman Interaction, vol. 12, no. 1, pp. 81–118, 2005.<br>2. E. Sharlin, B. Watson, Y. Kitamura, F. Kishino, and Y. Itoh, "On tangible user interfaces, humans and spatiality," Personal and Ubiquitous Computering, vol. 8, no. 5, pp. 338–346, 2004. | |
| | session 5 | G19 | Tangible interaction framework | 1. E. Hornecker and J. Buur, "Getting a grip on tangible interaction: A framework on physical space and social interaction," in Proceedings of CHI06, pp. 437–446, NY: ACM, 2006<br>2. Y. Fernaeus, J. Tholander, and M. Jonsson, | |

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| | | | | "Beyond representations: Towards an action-centric perspective on tangible interaction," International Journal of Arts and Technology, vol. 1, no. 3/4, pp. 249–267, 2008. | |
| | session 5 | G20 | Frameworks on Mappings: Coupling the Physical with the Digital | 1. B. Ullmer and H. Ishii, "Emerging frameworks for tangible user interfaces," in Human-Computer Interaction in the New Millenium, (J. M. Carroll, ed.), pp. 579–601, Addison-Wesley, 2001. 2. K. Fishkin, "A taxonomy for and analysis of tangible interfaces," Personal and Ubiquitous Computing, vol. 8, pp. 347–358, 2004. | |