

Leanne Miller Hirshfield

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| Experience | Fall 2007-present | Tufts University | Medford, MA |
| | Research Assistant | | |
| | <ul style="list-style-type: none">• Conducting PhD dissertation research using machine learning to acquire measures of mental workload to evaluate computer interfaces with functional near infrared spectroscopy. | | |
| | Summer 2007 | Air Force | Rome, NY |
| | Technical Summer Intern | | |
| | <ul style="list-style-type: none">• Summer work developing brain computer interaction experiments. | | |
| | Summer 2006 | MITRE Corporation | Bedford, MA |
| | Technical Summer Intern | | |
| | <ul style="list-style-type: none">• Summer work in human systems integration, visualization, and decision support. | | |
| | 2005–present | Tufts University | Medford, MA |
| Education | Research Assistant | | |
| | <ul style="list-style-type: none">▪ Data Collection in the Early Algebra Project in elementary school classrooms.. | | |
| | Teaching Assistant | | |
| | <ul style="list-style-type: none">▪ Grading of coursework and conducting of weekly labs for COMP 10. | | |
| | 2003 - 2005 | NSF Learning Partnerships | Golden, CO |
| | Fellow | | |
| | <ul style="list-style-type: none">▪ Created and led a free technology camp for low-income students.▪ Spent 20 hrs/week enriching a middle school mathematics classroom. | | |
| | Summer 2002,2003 | Internal Drive Technology Camp | Boulder, CO |
| Programming and Robotics Instructor | | | |
| <ul style="list-style-type: none">▪ Taught middle school students C++, Java, and Lego Mindstorm robotics | | | |
| 1998–2002 | Hamilton College | Clinton, NY | |
| <ul style="list-style-type: none">▪ B.A., Computer Science.▪ 3.67 GPA▪ Graduated <i>magna cum laude</i> with honors in my major. | | | |
| 2003–2005 | Colorado School of Mines | Golden, CO | |
| <ul style="list-style-type: none">▪ M.S. in Computer Science.▪ 3.85 GPA | | | |
| 2005–present | Tufts University | Medford, MA | |
| <ul style="list-style-type: none">▪ PhD. in Computer Science.▪ Research in Human Computer Interaction. | | | |

Publications

- **Hirshfield, L.M.** Solovey, E.T, Girouard, A. Kebinger, J. Jacob, R.J.K., Sassaroli, A. Fantini, S. Uncovering Syntactic Workload in the Brain Using Functional Near Infrared Spectroscopy. *Proc. ACM CHI 2008 Human Factors in Computing Systems Conference*, (2009), ACM Press.(**submitted**)
- **Hirshfield, L.M.**, Chauncey, K. Solovey, E.T., Girouard, A. Gulotta, R., Jacob, R.J.K., Sassaroli, A., Fantini, S., Combining Electroencephalograph and Functional Near Infrared Spectroscopy to Explore Users' Instantaneous and Continuous Mental Workload States. International Conference on Human Computer Interaction, 2009. (**submitted**)
- Sassaroli, A., Tong, Y, Fantini, S. **Hirshfield, L.M**, Girouard, A., Solovey E.T., Jacob, R.J.K., Discrimination of mental workload levels in human subjects with functional near-infrared spectroscopy. *accepted in the Journal of Innovative Optical Health Sciences*, 2009. (**accepted**)
- Jacob, R.J.K., Girouard, A., **Hirshfield, L.M.**, Horn, M.S., Shaer, O., Solovey, E.T. and Zigelbaum, J., Reality-Based Interaction: A Framework for Post-WIMP Interfaces. in *Proc. ACM CHI 2008 Human Factors in Computing Systems Conference*, (2008)
- Sassaroli, A., Tong, Y., **Hirshfield, L.H.**, Girouard, A., Solovey, E.T., Jacob, R.J.K. and Fantini, S., Real-time assessment of mental workload with near infrared spectroscopy: potential for human-computer interaction. in *BIOMED, OSA topical meeting*, (2008), Poster presentation.
- **Hirshfield, L.M.**, Girouard, A., Solovey, E.T., Jacob, R.J.K., Sassaroli, A., Tong, Y. and Fantini, S., Human-Computer Interaction and Brain Measurement Using Functional Near-Infrared Spectroscopy Poster Paper. in *ACM UIST 2007 Symposium on User Interface Software and Technology*, Poster Paper (2007).
- Jacob, R.J.K., Girouard, A., Horn, M., **Hirshfield, L.**, Shaer, O., Treacy, E. and Zigelbaum, J., What Is the Next Generation of Human-Computer Interaction?, *interactions*, vol. 14, no. 3 (May 2007).
- Girouard, A., **Hirshfield, L.M.**, Solovey, E.T. and Jacob, R.J.K., Using functional Near-Infrared Spectroscopy in HCI: Toward evaluation methods and adaptive interfaces. in *ACM CHI 2008 Workshop on Brain-Computer Interfaces for HCI and Games*, (2008).
- Horn, M.S., Shaer, O., Girouard, A., **Hirshfield, L.M.**, Solovey, E.T., Zigelbaum, J. and Jacob, R.J.K., Putting Tangible User Interfaces in Context: A Unifying Framework for Next Generation HCI. *ACM CHI 2007 Workshop on Tangible User Interfaces in Context and Theory* (2007).
- Jacob, R.J.K., Girouard, A., **Hirshfield, L.M.**, Horn, M.S., Shaer, O., Solovey, E.T. and Zigelbaum, J., Reality-Based Interaction: Unifying the New Generation of Interaction Styles, *ACM CHI 2007 Human Factors in Computing Systems Conference*, ACM Press, Work in Progress paper (2007).
- Girouard, A. Solovey, E. **Hirshfield, L.** Ecott, S., Shaer, O. Jacob, R., SmartBlocks: A Tangible Mathematical Manipulative. In TEI 2007. First International Conference on Tangible and Embedded Interaction (2007).
- Powers, K. Ecott, S., **Hirshfield, L.** *Through the Looking Glass: Teaching CS0 with Alice*. Proceedings on the conference on Special Interest Group on Computer Science Education (SIGCSE). 2007.
- **Miller. L.** and Moskal B. *Technology Camp 101: Stimulating Middle School Students' Interests in Computing*. Frontiers in Education Conference. 2005.

Grants

- Jacob, R.J.K. (PI), **Hirshfield, L.M.** Using Brain Measurement to Evaluate the Effects of Interface Disruptions on Computer Users. Airforce Office of Scientific Research (AFOSR). Fall 2008 – Fall 2011 (~\$300K)
- Jacob, R.J.K., Fantini, S. National Science Foundation BES-93840. Fall 2007 – Fall 2010 (~\$400K).
- **Miller, L.** Moskal, B. *Designing Effective Educational Software: Involving Children in the Design Process*. American Society of Engineering Education
- Received \$1100 for purchase of Lego Mindstorm kits from Adams 50 School Board, for use in middle school classroom (2004).
- **Miller, L.** Ewing, M. Tech Camp 101. Sigma Xi. 2005. (Amount: \$1000)
- Received \$1500 from Women in Science, Engineering, and Mathematics (WISEM) for Technology Camp 101. (2005).
- Dean, A., **Miller, L.**, Ewing, M., Moskal, B. & Fairweather, G. (2006). /Tech Camp 101/. Mathematical Association of America, Tensor Foundation (Amount: \$5000)