Manolya Eyiyurekli McCormick, Ph.D.

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Education

Doctor of Philosophy in Computer Science, College of Engineering, Drexel University, Philadelphia, PA.

Graduated – December 2012

GPA – 3.88

PhD Thesis: *Interactive Freeform Editing Techniques for Large-Scale, Multiresolution Level Set Models*

Master of Science in Computer Science, College of Engineering, Drexel University, Philadelphia, PA.

Graduated – September 2006

GPA – 3.73

Master's Thesis: *Simulation of Chemotaxis Based Cell Aggregation*

Bachelor of Science in Computer Science, College of Engineering, Isik University, Istanbul, Turkey.

Graduated – June 2004

GPA – 3.92

Work Experience

June 2009–Sept 2009 **DreamWorks Animation SKG** **Glendale, CA**

Research & Development Intern

Worked with the research and development team on implementing advanced techniques for surface extraction from volumetric implicit data. Responsibilities included software development for use in the production pipeline for making 3D animated movies. Worked in extreme programming pairs to develop a fluid solver for particle systems. Participated in ongoing research on level-set methods and contributed towards writing a narrow-band level-set library.

Sept 2004–Sept 2011 **Drexel University** **Philadelphia, PA**

Research Assistant

Level Set Surface Editing. Perform research on interactive, multi-resolution, large scale surface editing using level set methods. Contribute towards designing and implementing an OpenGL application to interactively deform 3D objects, creating the mathematical model for speed functions that lead to different free-form deformations.

Simulation of Chemotaxis-Based Cell Aggregation. Perform research on dynamics of cell motility and aggregation in tissue generation. Contribute towards designing and implementing an OpenGL simulation to demonstrate virtual tissue development.

July 2003–Aug 2004 **SIEMENS AS** **Istanbul, Turkey**

Software Engineer

Worked in a group developing a forecast reporting tool. Contributions include designing and administering a relational database, implementing an intranet application that helps user to enter his sales forecast and create and evaluate reports.

Contributed to DSPS project, the strategy planning intranet application. Designed and implemented functions to evaluate sales reports.

Computer Experience

Technical Skills: C/C++, OpenGL, Python, SQL, HTML, JavaScript, Matlab

Operating Systems: Mac OS, Linux

Awards & Recognition

2011	Outstanding Graduate Student Research Award	Department of Computer Science, Drexel University
2008	George Hill Jr. Endowed Fellowship	College of Engineering, Drexel University
2004	Valedictorian	Department of Computer Science, Isik University

Relevant Graduate Course-work

Advanced Computer Graphics	Partial Differential Equations	Computational Geometry
Object Recognition	Computer Vision	Parallel Processing
Data Structures and Algorithms	Mathematics of Medical Imaging	Artificial Intelligence

Selected Publications

- M. Eyiyurekli, D. Breen, "Data Structures for Interactive High Resolution Level-Set Surface Editing", Proceedings of Graphics Interface, May 2011, pp. 95-102.
- M. Eyiyurekli, D. Breen, "Interactive Free-Form Level-Set Surface-Editing Operators", Computers & Graphics, Vol. 34 No. 5, 2010, pp. 621-638.
- M. Eyiyurekli, C. Grimm, D. Breen, "Editing Level-Set Models with Sketched Curves", Proc. of Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling, August 2009, pp. 45-52.
- M. Eyiyurekli, D. Breen, "Localized Editing of Catmull-Rom Splines", Computer Aided Design and Applications, Vol. 6, No. 3, 2009, pp. 307-316.
- L. Bai, M. Eyiyurekli, P. Lelkes and D. Breen, "Self-Organized Sorting of Heterotypic Agents Via a Chemotaxis Paradigm" Science of Computer Programming, Vol. 78, No. 5, pp. 594-611, May 2013.
- M. Eyiyurekli, L. Bai, P. Lelkes, D. Breen, "Chemotaxis-based Sorting of Self-Organizing Heterotypic Agents" Proceedings of the ACM Symposium on Applied Computing, Self-organizing Complex Systems Track, Switzerland, March 2010.
- L. Bai, M. Eyiyurekli, D. Breen, "Automated Shape Composition Based on Cell Biology and Distributed Genetic Programming", Proceedings of Genetic and Evolutionary Computation Conference, July 2008, pp. 1179-1186
- L. Bai, M. Eyiyurekli, D. Breen, "Self-Organizing Primitives for Automated Shape Composition", Proceedings of Shape Modeling International 2008, June 2008, pp. 147-154
- L. Bai, M. Eyiyurekli and D. Breen, "An Emergent System for Self-Aligning and Self-Organizing Shape Primitives," Proc. Second IEEE International Conference on Self-Adaptive and Self-Organizing Systems, October 2008, pp. 445-454.
- M. Eyiyurekli, P. Manley, P. Lelkes and D. Breen, "A Computational Model of Chemotaxis-based Cell Aggregation," BioSystems, Vol. 93, No. 3, pp. 226-239, September 2008.
- M. Eyiyurekli, P. Lelkes and D. Breen, "Simulation of Chemotaxis-based Sorting of Heterotypic Cell Populations," Proc. IEEE / NIH BISTI Life Science Systems & Applications Workshop, November 2007, pp. 47-50.
- M. Eyiyurekli, P. Lelkes and D. Breen, "A Computational System for Investigating Chemotaxis-Based Cell Aggregation," Proc. European Conference on Artificial Life, September 2007, pp. 1034-1049.
- M. Eyiyurekli, "A Computational Model of Chemotaxis-based Cell Aggregation," M.S. Thesis, Drexel University, Philadelphia, PA, August 2006.