

Mubbasir Kapadia
<http://www.cs.rutgers.edu/~mubbasir>
Nationality: Indian

Rutgers University, Department of Computer Science,
Hill Center, 110 Frelinghuysen Road,
Piscataway, NJ 08854

Phone: +1 848-445-8827
Email: mubbasir.kapadia@rutgers.edu

Education

PhD , Computer Science Thesis: <i>Authoring and Evaluating Autonomous Virtual Humans</i> University of California, Los Angeles	GPA: 3.88/4.0 Jan '09 – Aug '11
Masters , Computer Science Project: <i>Egocentric Fields for Pedestrian Simulation</i> University of California, Los Angeles	GPA: 3.93/4.0 Sep '07 - Dec '08
Bachelor of Engineering , Computer Engineering Project: <i>Autonomous Robotics</i> D.J. Sanghvi College of Engineering, Mumbai, India	GPA: 3.85/4.0 Aug '03 - Mar '07

Current Position

Assistant Professor, Computer Science.
Rutgers University.
January 2015 – Present.

Awards and Honors

Scholarship from J.N. Tata and Bharat Petroleum for graduate studies.	Aug 2007
Scholarship for academic excellence by J.R.D Ratan Tata Trust.	Jan 2006
Rank 2 in Fourth Year of B.E, Mumbai.	Feb 2007
Rank 1 in Third Year of B.E, Mumbai.	Feb 2006
Rank 1 in Second Year of B.E, Mumbai.	March 2005

Books and Book Chapters

- [1] **Mubbasir Kapadia**. *Authoring and Evaluating Autonomous Virtual Human Simulations*. Lambert Academic Publishing, 2012.
- [2] **Mubbasir Kapadia** and Norman I. Badler. Navigation and steering for autonomous virtual humans. *Wiley Interdisciplinary Reviews: Cognitive Science*, 2013.
- [3] **Mubbasir Kapadia**, Alexander Shoulson, Funda Durupinar, and Norman Badler. Authoring Diversity in Personality and Behavior for Multi-Actor Simulations. In *Modeling, Simulation and Visual Analysis of Large Crowds*. Springer-Verlag, 2012 (Book Chapter, To appear).

- [1] Alejandro Beacco Porres, Nuria Pelechano, Mubbasir Kapadia, and Norman I. Badler. Footstep parameterized motion blending using barycentric coordinates. *Computers and Graphics*, 2014 (To Appear).
- [2] Kai Ninomiya, Mubbasir Kapadia, Alexander Shoulson, Francisco Garcia, and Norman Badler. Planning approaches to constraint-aware navigation in dynamic environments. *Computer Animation and Virtual Worlds*, pages n/a–n/a, 2014.
- [3] Cory D. Boatright, **Mubbasir Kapadia**, Jennie M. Shapira, and Norman I. Badler. Generating a Multiplicity of Policies for Agent Steering in Crowd Simulation. *Journal of Computer Animation and Virtual Worlds*, 2014.
- [4] A. Shoulson, N. Marshak, M. Kapadia, and N.I. Badler. Adapt: The agent development and prototyping testbed. *Visualization and Computer Graphics, IEEE Transactions on*, 20(7):1035–1047, July 2014.
- [5] **Mubbasir Kapadia**, Shawn Singh, William Hewlett, Glenn Reinman, and Petros Faloutsos. Parallelized Egocentric Fields for Autonomous Navigation. *The Visual Computer*, pages 1–19, January 2012.
- [6] **Mubbasir Kapadia**, Shawn Singh, Glenn Reinman, and Petros Faloutsos. A Behavior-Authoring Framework for Multiactor Simulations. *Computer Graphics and Applications, IEEE*, 31(6):45–55, Nov-Dec 2011.
- [7] Shawn Singh, **Mubbasir Kapadia**, Glenn Reinman, and Petros Faloutsos. Footstep Navigation for Dynamic Crowds. *Computer Animation and Virtual Worlds*, 22(2-3):151–158, 2011.
- [8] Matthew Schuerman, Shawn Singh, **Mubbasir Kapadia**, and Petros Faloutsos. Situation Agents: Agent-based Externalized Steering Logic. *Computer Animation and Virtual Worlds*, 21:267–276, May 2010.
- [9] Shawn Singh, **Mubbasir Kapadia**, Petros Faloutsos, and Glenn Reinman. SteerBench: A Benchmark Suite for Evaluating Steering Behaviors. *Computer Animation and Virtual Worlds*, 20(5-6):533–548, 2009.

- [1] **Kapadia, Mubbasir**, Jessica Falk, Fabio Zünd, Marcel Marti, Robert W. Sumner, and Markus Gross. Computer-assisted authoring of interactive narratives. In *Proceedings of the 19th Symposium on Interactive 3D Graphics and Games, i3D '15*, pages 85–92, New York, NY, USA, 2015. ACM.
- [2] Glen Berseth, Brandon Haworth, **Mubbasir Kapadia**, and Petros Faloutsos. Characterizing and Optimizing Game Level Difficulty. In *ACM SIGGRAPH International Conference on Motion in Games*, 2014.
- [3] Glen Berseth, **Mubbasir Kapadia**, Brandon Haworth, and Petros Faloutsos. SteerFit: Automated Parameter Fitting for Steering Algorithms. In *ACM SIGGRAPH/Eurographics Symposium on Computer Animation, SCA '14*, New York, NY, USA, 2014. ACM.
- [4] F.M. Garcia, M. Kapadia, and N.I. Badler. Gpu-based dynamic search on adaptive resolution grids. In *Robotics and Automation (ICRA), 2014 IEEE International Conference on*, pages 1631–1638, May 2014.
- [5] Tianyu Huang, **Mubbasir Kapadia**, Norman I. Badler, and Marcelo Kallmann. Path Planning for Coherent and Persistent Groups. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2014 (To Appear).
- [6] Yu Wang, **Mubbasir Kapadia**, Pengfei Huang, Ladislav Kavan, and Norman I. Badler. Sound Localization and Multi-Modal Steering for Autonomous Agents. In *ACM SIGGRAPH I3D*, 2014.
- [7] Cory D. Boatright, **Mubbasir Kapadia**, Jennie M. Shapira, and Norman I. Badler. Context-Sensitive Data-Driven Crowd Simulation. In *ACM SIGGRAPH VRCAI*, 2013.
- [8] Alexander Shoulson, Max Gilbert, **Mubbasir Kapadia**, and Norman I. Badler. An Event-Centric Planning Approach for Dynamic Real-Time Narrative. In *ACM SIGGRAPH International Conference on Motion in Games*, 2013.
- [9] Glen Berseth, **Mubbasir Kapadia**, and Petros Faloutsos. SteerPlex: Estimating Scenario Complexity for Simulated Crowds. In *ACM SIGGRAPH International Conference on Motion in Games*, 2013.
- [10] **Mubbasir Kapadia**, Kai Ninomiya, Alexander Shoulson, Francisco Garcia, and Norman I. Badler. Constraint-Aware Navigation in Dynamic Environments. In *ACM SIGGRAPH International Conference on Motion in Games*, 2013.
- [11] Alexander Shoulson, **Mubbasir Kapadia**, and Norman Badler. PASTe: A Platform for Adaptive Storytelling with Events. In *Intelligent Narrative Technologies VI. Papers from the 2013 AIIDE Workshop*, 2013.
- [12] M. Kapadia, F. Garcia, C.D. Boatright, and N.I. Badler. Dynamic search on the GPU. In *Intelligent Robots and Systems (IROS), 2013 IEEE/RSJ International Conference on*, pages 3332–3337, Nov 2013.

- [13] Aline Normoyle, Fannie Liu, **Mubbasir Kapadia**, Norman I. Badler, and Sophie Joerg. The Effect of Posture and Dynamics on the Perception of Emotion. In *Proceedings of the ACM Symposium on Applied Perception*, SAP '13, New York, NY, USA, 2013. ACM.
- [14] **Mubbasir Kapadia**, Alejandro Beacco, Francisco Garcia, Vivek Reddy, Nuria Pelechano, and Norman I. Badler. Multi-domain real-time planning in dynamic environments. In *Proceedings of the 12th ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, SCA '13, pages 115–124, New York, NY, USA, 2013. ACM.
- [15] Pengfei Huang, **Mubbasir Kapadia**, and Norman I. Badler. SPREAD: sound propagation and perception for autonomous agents in dynamic environments. In *Symposium on Computer Animation*, pages 135–144, 2013.
- [16] Alejandro Beacco, Nuria Pelechano, and **Mubbasir Kapadia**. Dynamic footsteps planning for multiple characters. In *Proceedings of the Congreso Espaol de Informtica Grfica*, CEIG 2013. EUROGRAPHICS, 2013.
- [17] Alexander Shoulson, Nathan Marshak, **Mubbasir Kapadia**, and Norman I. Badler. ADAPT: Agent Development and Prototyping Testbed. In *Proceedings of the symposium on Interactive 3D graphics and games*, I3D. ACM, 2013 (Extended version invited to TVCG).
- [18] Mubbasir Kapadia, I-kao Chiang, Tiju Thomas, Norman I. Badler, and Joseph T. Kider, Jr. Efficient Motion Retrieval in Large Motion Databases. In *Proceedings of the ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games*, I3D '13, pages 19–28, New York, NY, USA, 2013. ACM.
- [19] **Mubbasir Kapadia**, Alexander Shoulson, Cory Boatright, Pengfei Huang, Funda Durupinar, and Norman I. Badler. What's Next? The New Era of Autonomous Virtual Humans. In *Fifth International Conference on Motion in Games*, 2012.
- [20] Cory Boatright, **Mubbasir Kapadia**, and Norman I. Badler. Pedestrian Anomaly Detection using Context-Sensitive Crowd Simulation. In *First International Workshop on Pattern Recognition and Crowd Analysis*, 2012.
- [21] Costas Sideris, **Mubbasir Kapadia**, and Petros Faloutsos. Parallelized Incomplete Poisson Preconditioner in Cloth Simulation. In *Fourth International Conference on Motion in Games*, 2011.
- [22] **Mubbasir Kapadia**, Matthew Wang, Petros Faloutsos, and Glenn Reinman. Improved Benchmarking for Steering Algorithms. In *Fourth International Conference on Motion in Games*, 2011.
- [23] **Mubbasir Kapadia**, Matthew Wang, Shawn Singh, Glenn Reinman, and Petros Faloutsos. Scenario Space: Characterizing Coverage, Quality, and Failure of Steering Algorithms. In *Proceedings of the 2011 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, SCA '11, New York, NY, USA, 2011. ACM.
- [24] **Mubbasir Kapadia**, Shawn Singh, Glenn Reinman, and Petros Faloutsos. Multi-Actor Planning for Directable Simulations. In *Proceedings of the 2011 Workshop on Digital Media and Digital Content Management*, DMDCM '11, pages 111–116, Washington, DC, USA, 2011. IEEE Computer Society.

- [25] Shawn Singh, **Mubbasir Kapadia**, William Hewlett, Glenn Reinmann, and Petros Faloutsos. A Modular Framework for Adaptive Agent-Based Steering. In *Proceedings of the 2011 symposium on Interactive 3D graphics and games*, I3D '11. ACM, 2011.
- [26] **Mubbasir Kapadia**, Shawn Singh, Glenn Reinman, and Petros Faloutsos. Behavior Authoring for Crowd Simulations. In *Symposium on Interactive 3D Graphics and Games*, I3D '11, pages 199–199, New York, NY, USA, 2011. ACM.
- [27] Wenjia Huang, **Mubbasir Kapadia**, and Demetri Terzopoulos. Full-Body Hybrid Motor Control for Reaching. In *Motion in Games*, volume 6459 of *Lecture Notes in Computer Science*, pages 36–47. 2010.
- [28] Shawn Singh, **Mubbasir Kapadia**, Glenn Reinmann, and Petros Faloutsos. On the Interface Between Steering and Animation for Autonomous Characters. In *In Workshop on Crowd Simulation, Computer Animation and Social Agents*, Saint-Malo, France, 2010.
- [29] **Mubbasir Kapadia**, Shawn Singh, Brian Allen, Glenn Reinman, and Petros Faloutsos. SteerBug: An Interactive Framework for Specifying and Detecting Steering Behaviors. In *Proceedings of the 2009 ACM SIGGRAPH/Eurographics Symposium on Computer Animation*, SCA '09, pages 209–216, New York, NY, USA, 2009. ACM.
- [30] **Mubbasir Kapadia**, Shawn Singh, William Hewlett, and Petros Faloutsos. Egocentric Affordance Fields in Pedestrian Steering. In *Proceedings of the 2009 symposium on Interactive 3D graphics and games*, I3D '09, pages 215–223, New York, NY, USA, 2009. ACM.
- [31] Shawn Singh, **Mubbasir Kapadia**, Petros Faloutsos, and Glenn Reinman. An Open Framework for Developing, Evaluating, and Sharing Steering Algorithms. In *Proceedings of the 2nd International Workshop on Motion in Games*, MIG '09, pages 158–169, Berlin, Heidelberg, 2009. Springer-Verlag.
- [32] Shawn Singh, Mishali Naik, **Mubbasir Kapadia**, Petros Faloutsos, and Glenn Reinman. Watch Out! A Framework for Evaluating Steering Behaviors. In *Motion in Games, First International Workshop*, pages 200–209, 2008.

Technical Reports and Theses

- [1] Glen Berseth, Petros Faloutsos, and **Mubbasir Kapadia**. SteerFit: Automated Parameter Fitting for Steering Algorithms. York University, March 2014.
- [2] **Mubbasir Kapadia**. *Authoring and Evaluating Autonomous Virtual Human Simulations*. PhD thesis, Los Angeles, CA, 2011 (Published as a book).
- [3] Costas Sideris, **Mubbasir Kapadia**, and Petros Faloutsos. Parallelized Incomplete Poisson Preconditioner in Cloth Simulation. Intel Software Network, October 2011.
- [4] **Mubbasir Kapadia**, Petros Faloutsos, and Glenn Reinman. Egocentric Affordance Fields in Pedestrian Steering. Intel Software Network, May 2011.
- [5] **Mubbasir Kapadia**. Variable Resolution Anytime A* – Application in Real-Time Path Planning for Complex Environments. Technical report, Los Angeles, CA, USA, 2011.

- [6] Shawn Singh, **Mubbasir Kapadia**, Glenn Reinman, and Petros Faloutsos. Evaluating the Costs and Constraints Used to Make Footstep Decisions. Technical report, Los Angeles, CA, USA, 2010.
- [7] **Mubbasir Kapadia**, Shawn Singh, Glenn Reinman, and Petros Faloutsos. Multi-Agent Behavior Specification and Generation. Technical report, Los Angeles, CA, USA, 2010.
- [8] **Mubbasir Kapadia**, Adil Lakhani, Rohit Jhangiani, and M.V. Deshpande. Autonomous Robotics. Mumbai, India, 2007. NCICT.
- [9] **Mubbasir Kapadia**, M.V. Deshpande, and Jayant Umale. Rubiks Heuristic. Mumbai, India, 2007. Electro Info-Com.

Refereed Courses and Tutorials

- [1] Marcelo Kallmann and **Kapadia, Mubbasir**. Navigation meshes and real-time dynamic planning for virtual worlds. In *ACM SIGGRAPH 2014 Courses*, SIGGRAPH '14, pages 3:1–3:81, New York, NY, USA, 2014. ACM.
- [2] Norman I. Badler, **Mubbasir Kapadia**, Jan Allbeck, Yiorgos Chrysanthou, Nuria Pelechano, and Stephen Guy. Simulating heterogeneous crowds with interactive behaviors. In *EUROGRAPHICS 2014 Tutorials*, April 2014.

Invited Talks, and Presentations

- [1] Bringing Stories To Life. *Non-Linear Storytelling Workshop* Zurich, Switzerland, November 2013.
- [2] Context-Sensitive Navigation in Dynamic Environments. *ACM SIGGRAPH Motion in Games* Dublin, Ireland, November 2013.
- [3] Multi-domain real-time planning in dynamic environments. *ACM SIGGRAPH/EUROGRAPHICS Symposium on Computer Animation* Anaheim, California, USA, July 2013.
- [4] Towards a Computational Model for Laban Movement Analysis. *Moving Stories, Simon Fraser University, School of Interactive Arts and Technology* Surrey, Canada, May 2013.
- [5] From Boids to Biped: A Control Obstacle Approach. *CIS 563: Physically Based Animation, University of Pennsylvania* Philadelphia, PA, USA, April 2013.
- [6] Footstep-based control, Auditory Perception, and Event-Centric Authoring of Autonomous Virtual Humans. *CIS 564: Game Design Practicum, Computer Graphics and Games Technology, University of Pennsylvania* Philadelphia, PA, USA, March 2013.
- [7] Whats Next? The New Era of Autonomous Virtual Humans. *Simon Fraser University, School of Interactive Arts and Technology* Surrey, Canada, March 2013.
- [8] Efficient Motion Retrieval in Large Motion Databases . *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games* Orlando, Florida, USA, March 2013.

- [9] Whats Next? The New Era of Autonomous Virtual Humans. *Universtiy of Georgia, Institute of Artificial Intelligence* Athens, Georgia, USA, March 2013.
- [10] Whats Next? The New Era of Autonomous Virtual Humans. *New Mexico State University*, New Mexico, USA, February 2013.
- [11] The Next Generation of Autonomous Virtual Humans. *Disney Research*, Zurich, Switzerland, November 2012.
- [12] Whats Next? The New Era of Autonomous Virtual Humans. *Fifth International Conference on Motion in Games*, Rennes, France, November 2012.
- [13] Simulations and Games as Platforms for Shared Cognition in Human-Robot Teams. *RCTA Joint Area Workshop on Shared Cognition and Shared Mental Models in Human-Robot Teams*, Florida, USA, December 2011.
- [14] Improved Benchmarking for Steering Algorithms. *4th International Conference on Motion in Games*, Edinburgh, UK, November 2011.
- [15] Scenario Space: Characterizing Coverage, Quality, and Failure of Steering Algorithms. *ACM SIGGRAPH Symposium on Computer Animation*, Vancouver, Canada, August 2011.
- [16] A Robust, Versatile Framework for Simulating Autonomous Virtual Humans. *Computer Graphics Colloquium, University of Pennsylvania*, Philadelphia, USA, May 2011.
- [17] Behavioral Modeling of Crowds in Theme Parks. *Invited talk: Disney Imagineering*, Glendale, CA, May 2011.
- [18] Simulating Autonomous Virtual Humans. *Rhythm and Hues Visual Effects Studio*, El Segundo, CA, May 2011.
- [19] Simulating and Evaluating Large Crowds. *Invited Lecture: CS 269 – Humanoid Character Simulation*, UCLA, April 2011.
- [20] Full-Body Hybrid Motor Control for Reaching, Motion in Games. *3rd International Conference on Motion in Games*, Zeist, Netherlands, October 2010.
- [21] KLUM: A Near Real-Time Cloth Modeling, Manipulation and Simulation Framework. *Rhythm and Hues Visual Effects Studio*, El Segundo, CA, September 2010.
- [22] SteerBug: An Interactive Framework for Specifying and Detecting Steering Behaviors. *ACM SIGGRAPH Symposium of Computer Animation*, New Orleans, LA, August 2009.
- [23] Egocentric Affordance Fields in Pedestrian Simulation. *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games*, Boston, USA, February 2009.

Professional Activities

Grant Proposals

Co-Author, Intel Visual Computing Research Grant. *Using a many-core environment for high performance large scale virtual character simulation*. 2010, \$45,000. (PI: Prof. Petros Faloutsos)

Co-Author, Intel Equipment Grant. *Emerald Ridge Xeon Server*. 2010, \$10,100. (PI: Prof. Petros Faloutsos)

Co-Author, NVIDIA Hardware Request, Nvidia GeForce GTX 680(Kepler). 2012. (PI: Prof. Norman I. Badler)

Program Chair

ACM SIGGRAPH International Conference on Motion in Games 2015

Service on Program Committees

International Conference on Intelligent Virtual Agents	2014
ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games	2014, 2015
ACM SIGGRAPH International Conference on Motion in Games	2011 – 2014
IEEE International Symposium on Robot and Human Interactive Communication	2014
EC-SISG: Ent Comp Special issue on SGs	2013
8th International Conference on Graphics Interface	2012

Journal Refereeing

Journal of Graphics Tools	2013
IEEE Transactions on Visualization and Computer Graphics	2012 – Present
Journal of Computer Animation and Virtual Worlds (JCAVW)	2011 – Present
The Visual Computer	2011 – Present
Computers and Graphics	2013
ACM Computing Reviews	2014 – Present

Conference Refereeing

ACM SIGGRAPH	2010 – Present
ACM SIGGRAPH ASIA	2013 – Present
ACM Symposium on Computer Animation (SCA)	2009 – Present
Computer Animation and Social Agents (CASA)	2010 – Present
Computer Graphics International (CGI)	2013,2014
Motion in Games (MIG)	2009 – Present
Euro-graphics (EG)	2012 – Present
Graphics Interface (GI)	2012
Pacific Graphics	2012,2013
CAD/Graphics	2013
Conference on Graphics, Patterns, and Images (SIBGRAPI)	2013,2014
International Conference on Games and Virtual Worlds for Serious Applications	2012
IEEE/RSJ International Conference on Intelligent Robots and Systems	2013 – Present
IEEE International Conference on Robotics and Automation	2014 – Present
IEEE International Symposium on Robot and Human Interactive Communication	2013,2014
VS-Games: Games and Learning Alliance (GaLA) Conference	2012

Student Supervision and Selected Collaborative Projects

Doctoral Students

- **Pengfei Huang.**¹ A sound-propagation and perception framework for autonomous virtual humans.
- **Cory Boatright.**¹ Context-sensitive data-driven models for pedestrian simulation and anomaly detection.
- **Alexander Shoulson.**¹ Interactive Narrative Virtual Worlds.
- **Yu Wang.**¹ Sound Localization and Multi-Modal Steering.
- **Matthew Wang.**² Statistical Analysis and Evaluation of Crowd Simulations. Resulted in 2 conference publications and one ongoing journal submission.
- **Costas Sideris.**² Use of novel preconditioning techniques for use in cloth simulation. Resulted in 1 conference publication.
- **Wenjia Huang.**² Full-body hybrid control techniques for reaching motion. Resulted in 1 conference publication.
- **Alejandro Beacco Porres.**³ Multi-Domain Real-time Planning for Autonomous Agents.

Masters Students

- **Hao Li.**¹ Speech Perception in Autonomous Virtual Humans.
- **Lauren Frazier.**¹ Evaluation of gesture-based control for robot navigation. Resulted in Masters Thesis.
- **Tiju Thomas.**¹ Efficient Motion Retrieval in Large Motion Databases. Resulted in 1 conference publication..
- **Matthew Scuermerman.**² Externalizing steering logic for complex multi-agent interactions in crowds. Resulted in 1 journal publication.
- **Himanshu Masand.**¹ Authoring Complex Multi-Agent Behaviors using Parametrized Behavior Trees. Summer Internship Research project.
- **Zi Yan.**¹ Crowd Simulation on the GPU. Class project.
- **Mark Griffin.**¹ Crowd Simulation on the GPU. Class Project.

Undergraduate Students

- **Kai Ninomiya.**¹ Constraint-Aware Navigation in Dynamic Environments.
- **Max Gilbert.**¹ Event-Centric Planning for Dynamic Narrative.
- **Francisco Garcia.**¹ Developing Anytime Dynamic Planning algorithms and porting them to the GPU.
- **Nathan Marshak.**¹ Interactive Physically-Based Character Animation via Optimization. Senior Design Capstone Project.
- **Justin Cockburn and Yonas Solomon.**¹ Multi-Modal Human Robot Interaction in a Simulation Environment. Senior Design Capstone Project.
- **Corey Novich.**¹ Recreating a Virtual Middle-Eastern Marketplace. Summer Internship.
- **Xiaoyan (Zia) Zhu.**¹ Procedural Generation of Diverse Virtual Characters. Summer Internship.
- **Marley Glib.**¹ Kinect-based Control of Virtual Crowds. Senior Design Capstone Project.
- **David Yang.**¹ Exploring Natural User Interfaces using the Microsoft Kinect. Senior Design Capstone Project.

Team Supervision

- **RCTA team.**¹ Supervised a team (> 8) of post-docs, PhDs, masters, and undergraduate students on a variety of multi-disciplinary research projects.
- **Darkgame team.**² Supervised a team (> 5) of undergraduate and graduate students in Computer Science and Design Media on developing *DarkGame*. Darkgame leverages the use of a custom haptic device and sensory deprivation in order to provide an entertainment platform where players that are unable to hear or see can fairly compete with other players.

Work Experience

- **Associate Research Scientist**, Disney Research Zurich, The Walt Disney Company (Switzerland) GmbH. Aug '13 - Jan '15
Research and development in character animation and crowd simulation.
- **Postdoctoral Researcher**, Human Modeling and Simulation Lab, University of Pennsylvania, Philadelphia, PA. Aug '11 - Aug '13
RCTA Team lead on multiple inter-disciplinary research projects.
- **Assistant Director**, SIG Center of Computer Graphics, University of Pennsylvania, Philadelphia, PA. Aug '11 - Aug '13
Student supervision on independent research projects & lab management.
- **Research Assistant**, Rhythm and Hues + MAGIX Lab, Los Angeles, CA. Mar '11 - July '11
Parallelization of cloth simulation engine.
- **R&D Intern**, Rhythm and Hues, El Segundo, CA. Jun '10 - Sep '10
Research and development. Interactive cloth modeling and simulation tool.
- **Software Engineer Intern**, Digital Domain, Venice, CA. Aug '08 - Oct '08
Software development. Asset management and visualization tool.
- **Software Engineer Intern**, Adconion Inc. Santa Monica, CA. Jun '08 - Aug '08
Software development and testing. Online advertisement prediction software.
- **Research Assistant**, MAGIX Lab, UCLA. Mar '08 - July '11
Research in steering, navigation, locomotion, and behavioral animation of autonomous agents.
- **Research Assistant**, Game Design Lab, UCLA. Jan '09 - July '11
Research, design and development of new forms of interactive media.

¹University of Pennsylvania.

²University of California, Los Angeles.

³Polytechnic University of Catalunya, Spain.

Teaching Experience

- **Leader**, CIS 800/001: Phd Special Topic, Graphics Reading Group. Sept '12 - Dec '12
University of Pennsylvania.
- **Co-Instructor**, Game Design Practicum. Sept '11 - Dec '11
Computer Graphics and Game Technology Program,
University of Pennsylvania.
- **Teaching Assistant**, Game Design. Jan '10 - Mar '10
Design and Media Department, UCLA.
- **Teaching Assistant**, Interactive Media. Mar '10 - Jun '10
Design and Media Department, UCLA.
- **Teaching Fellow**, Hindi and Urdu. Sep '07 - Dec '10
Asian Languages and Cultures Department, UCLA.

Software

SteerSuite. We have developed an open source software suite for developing and evaluating steering algorithms for virtual crowds. It integrates our research results over many years, into a working framework, which is available at <http://steersuite.cse.yorku.ca/>.

ADAPT: Agent Development and Prototyping Testbed. At UPenn, we are actively working on developing an open-source platform for providing an end-to-end solution for authoring and simulating autonomous virtual humans. This framework includes solutions for steering, pathfinding, full-body character animation, and behavior-authoring using behavior trees You can download ADAPT at <http://cg.cis.upenn.edu/hms/research/ADAPT/>.

Interactive Installations and Exhibitions

- The Ben Maltz Gallery , Darkgame, Otis College of Design, CA. Oct '09 - Jan '10
- BioLogic: A Natural History of Digital Life, The One, SIGGRAPH, New Orleans. August 2009
- Inspace, The One, New Media Scotland, University of Edinburgh, UK. December 2009
- SIGGRAPH ASIA Art Gallery, The One, SIGGRAPH ASIA, Yokohama, Japan. December 2009