

## **Amlan Mukherjee**

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## **Education**

2001-current

### **University of Washington**

*Seattle, WA*

Ph.D. Candidate in the Department of Civil and Environmental Engineering

Expected graduation date: July 2005

2000-2001

### **University at Buffalo, State University of New York**

*Buffalo, NY*

MS in Civil Engineering

1996-2000

### **Birla Institute of Technology and Science (BITS)**

*Pilani, India*

B.E. in Civil Engineering with Honors

## **Research**

Ph.D. Dissertation: *A Multi-Agent Framework for General Purpose Situational Simulations in Construction Management*

Chief research interests include application of techniques in artificial intelligence to build interactive and adaptive simulation technologies that can be used to develop better decision making tools for construction management and other related Civil Engineering domains.

## **Research Experience**

2000 – Current

### **Research Assistant**

Working on developing and testing Situational Simulations for the Construction Management domain

2003

July – December

### **Research Assistant**

*Human Interface Technology Laboratory, University of Washington*

Developed a peer-to-peer web-service supporting a surgical simulator using *Apache XML-SOAP* with Suzzane Weghorst (Funded by Agency for Health Research & Quality)

2001-2003

### **Research Assistant**

*Department of Construction Management, University of Washington*

Developed and implemented the interface for a *Web based Interactive Multi-Media Encyclopedia for High School Students*, with Prof. Eddy M. Rojas (Funded by National Electrical Contractor's Association)

## Teaching Experience

- 2004  
**Instructor**  
Department of Civil Engineering, University of Washington  
*CEE498A: AutoCAD Design* (Autumn Quarter, 61 students)
- 2004  
**Instructor**  
Department of Civil Engineering, University of Washington  
*CEE498A: AutoCAD Design* (Spring Quarter, 45 students)
- 2004  
**Teaching Assistant**  
Department of Civil Engineering, University of Washington  
*CEE320: Transportation Engineering* (Winter Quarter)
- 2002  
**Teaching Assistant**  
Department of Construction Management, University of Washington  
*CM412: Construction Practice* (Spring Quarter)
- 2002  
**Teaching Assistant**  
Department of Construction Management, University of Washington  
*CM421: Project Management* (Winter Quarter)
- 2001  
**Teaching Assistant**  
Department of Construction Management, University of Washington  
*CM410: Construction Estimating II* (Autumn Quarter)
- 2001  
**Teaching Assistant**  
Department of Civil Engineering, University at Buffalo, SUNY  
*Engineering Statistics* (Spring Semester)
- 2000  
**Teaching Assistant**  
Department of Civil Engineering, University at Buffalo, SUNY  
*Surveying* (Fall Semester)

## Industry Experience

- 2004  
July – December  
**Intern**  
*North Star Leadership Group*  
Developing 3D immersive simulation environments for training managers
- 1999 (Jan. – June)  
**Engineering Trainee**  
*Development Consultants Limited, Bombay, India*  
Design and construction of pipe rack structures and pile foundations
- 1998 Summer  
**Intern**  
*Development Consultants Limited, Calcutta, India*  
Planning and designing a film city

## **Publications**

### *Peer Reviewed Journal Papers*

- Submitted 2004      Rojas, E. & Mukherjee A. (2004) "A Multi-Agent Framework for General Purpose Situational Simulations in the Construction Management Domain," Submitted to the Journal of Computing in Civil Engineering, ASCE.
- Submitted 2003      Rojas, E. & Mukherjee A. "Interval Temporal Logic in General Purpose Situational Simulations," Journal of Computing in Civil Engineering, ASCE, 19(1) pp XX-XX (*In Print*)
- Submitted 2003      Rojas, E. & Mukherjee A. "A General Purpose Situational Simulation Environment for Construction Management Education," Journal of Construction Engineering and Management, ASCE. Accepted (*In Print*)
- 2003                  Rojas, E. & Mukherjee A. (2003) "Modeling the Construction Management Process to Support Situational Simulations," Journal of Computing in Civil Engineering, ASCE, 17(4) pp 273-280.
- 2002                  Rojas, E. and Mukherjee, A. (2002). "Simulando el Proceso de Gestión de la Construcción." *Revista Ingeniería de Construcción*, Pontificia Universidad de Chile, 17 (2), 144-119.

### *Peer Reviewed Conference Proceedings*

- Submitted 2004      Mukherjee, A., Rojas, E. & Winn, W. "Exploring Mental Models of Construction Managers" Accepted for the Construction Congress 2005, ASCE,
- Submitted 2004      Mukherjee, A., Rojas, E. & Winn, W. "Understanding Cognitive and Meta-Cognitive Processes in Construction Management: The System Dynamics Perspective" Accepted for the Construction Congress 2005, ASCE,
- Submitted 2004      Mukherjee, A., Winn, W. & Rojas, E. "Using Agent Driven Situational Simulations for Training Construction Managers" Accepted for presentation at the American Educational Researcher's Annual Meeting, Montreal, 2005.
- Submitted 2004      Mukherjee, A. & Rojas, E. "Agent Driven Situational Simulations in Construction Management" Submitted to the International Conference on Computing in Civil Engineering, 2005
- Submitted 2004      Mukherjee, A., Winn, W. & Rojas, E. "Interactive Situational Simulations in Construction Management" Submitted to the First Conference on the Future of the AEC Industry, Las Vegas, 2005. Organized by the Building Futures Council.
- 2004                  Mukherjee, A., Rojas, E. & Winn, W. (2004) "Implementing A General Purpose Framework Using Multi-Agents For Construction Management Education," Winter Simulation Conference, ACM/SIGSIM, Washington DC, December, 2004

- 2003 Mukherjee, A. & Rojas, E. (2003) "Reasoning about Actions and Events in Situational Simulations," Winter Simulation Conference, ACM/SIGSIM, New Orleans, December 7<sup>th</sup>-10<sup>th</sup>, 2003
- 2003 Mukherjee, A & Rojas, E. (2003) "Applying Multi-Agents for General Purpose Situational Simulations in Construction Management," ASCE Construction Research Council, Ph.D. Research Symposium, Nashville, November 14, 2003
- 2003 Rojas, E. and Mukherjee, A. (2003). "Implementing Situational Simulations through Distributed Databases." Proceedings of the 2003 Construction Congress, ASCE, March.
- 2003 Rojas, E. and Mukherjee, A. (2003). "Visualizing Situational Simulation Information." Proceedings of the 2003 Construction Congress, ASCE, March.
- 2002 Rojas, E. and Mukherjee, A. (2002). "Data Modeling for the Virtual Coach." Proceedings of the International Workshop on Information Technology in Civil Engineering, ASCE, 308-317.
- Workshops*
- 2004 Amlan Mukherjee and Ruth Fruland, (2004) "Teaching Complexity in Virtual Space" Human Interface Technology Laboratory, University of Washington, Consortium Meeting, 4th August, 2004.
- 2003 Invited talk: Colloquium in the Built Environment, BE 550, 9th October 2003, College of Architecture, University of Washington. Title: "A Multi-Agent Framework for General Purpose Situational Simulations in Construction Management"
- 1999 Gupta, R. and Mukherjee, A. (1999) "Systems Approach for Passive for Solar Architecture Design," Passive Solar Architecture, One day workshop at BITS, Pilani, February, 1999.

#### *MS Thesis*

- 2001 Virtual Reality Applications for the Virtual Coach. (2001) Department of Civil and Environmental Engineering, University at Buffalo, SUNY.

### **Computer Skills**

Programming languages: C, C++, Java, SQL, Lisp, FORTRAN  
 Operating systems: Linux/Unix, OS X, Windows XP/2000/98/95  
 Web services: Apache Tomcat, Apache Axis,  
 Database servers: PostgreSQL, MySQL  
 Engineering software: Maple, 3D Studio Viz, AutoCAD, Autodesk Land Desktop, SureTrak, Primavera Project Planner, Timberline's Precision Estimating, Augmented Reality Tool Kit, Adobe Photoshop, Illustrator.

### **Other Involvements**

Reviewer for Construction Research Congress, 2005

Student Member of the American Society of Civil Engineers (ASCE)

Member of the INFORMS College on Simulations.

2004 Summer Boot Camp in Technology Entrepreneurship, Center for Technology Entrepreneurship, University of Washington, Business School

Website administrator for University of Washington, Science and Engineering Business Association

Chief Editor of the Annual literary campus magazine, Cactus Flower, 1999

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## List of References

### ***Dr. Eddy M. Rojas***

Associate Professor, Department of Construction Management  
Adjunct Associate Professor, Department of Civil and Environmental Engineering  
Email: [er@u.washington.edu](mailto:er@u.washington.edu)  
Webpage: <http://faculty.washington.edu/er>  
Phone: (206)-616-1499 Fax: (206)-685-1976

### ***Dr. Scott Rutherford***

Professor, Department Chair, Department of Civil and Environmental Engineering  
Email: [scottrut@u.washington.edu](mailto:scottrut@u.washington.edu)  
Webpage: [http://www.ce.washington.edu/faculty/bios/rutherford\\_s.html](http://www.ce.washington.edu/faculty/bios/rutherford_s.html)  
Phone: (206)-685-2481 Fax: (206)-543-1543

### ***Dr. Joe P. Mahoney***

Professor, Department of Civil and Environmental Engineering  
Email: [jmahoney@u.washington.edu](mailto:jmahoney@u.washington.edu)  
Webpage: [http://www.ce.washington.edu/faculty/bios/mahoney\\_j.html](http://www.ce.washington.edu/faculty/bios/mahoney_j.html)  
Phone: (206)-685-1760 Fax: (206)-543-1543

### ***Dr. Thomas A. Furness III***

Professor, Department of Industrial Engineering  
Director, Human Interface Technology Laboratory  
Email: [tfurness@hitl.washington.edu](mailto:tfurness@hitl.washington.edu)  
Webpage: <http://www.hitl.washington.edu/people/tfurness/>  
Phone: (206)-685-8626 Fax: (206)-543-5380

### ***Dr. William Winn***

Professor, College of Education  
Director, Learning Center, Human Interface Technology Laboratory  
Adjunct Professor, Department of Technical Communication  
Email: [billwinn@u.washington.edu](mailto:billwinn@u.washington.edu)  
Webpage: <http://faculty.washington.edu/billwinn/>  
Phone: (206)-685-1185, (206)-543-1847 Fax: (206)-543-8439

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