

Osman Burchan Bayazit

PO.Box 13136
College Station, TX 77841
tel: (530) 323-9145 (courtesy of j2 Global Comm.)
email: burchanb@cs.tamu.edu

Dept. of Comp. Sci. Texas A&M University
College Station, TX 77843-3112
tel: (979) 847-8835 fax: (979) 458-0425
<http://parasol.tamu.edu/people/burchanb>

Education

Ph.D. Candidate in Computer Science, Texas A&M University, Expected Spring 2003
Ph.D. Topic: *Solving Motion Planning Problems by Iterative Relaxation of Constraints*
Thesis advisor: Nancy M. Amato

M.S. in Computer Science, Texas A&M University, May 1998
Thesis: *Choosing Good Distance Metrics and Local Planners for Probabilistic Roadmap Methods*
Thesis advisor: Nancy M. Amato

B.S. in Computer Engineering, Middle East Technical University, June 1994
(METU is among the top three universities in engineering in Turkey.)

Research Interests

Motion planning, robotics, CAD, VR, computational biology/chemistry,
haptic interfaces, machine learning, group behaviors

Honors and Awards

Student Research Week, First Place in Engineering (University wide annual award recognizing research excellence), Texas A&M University, 2002

Graduate Student Research Award (Annual award recognizing research excellence), Second Place, Department of Computer Science, Texas A&M University, 2001

Fellowship for Graduate Studies Abroad, Turkish Ministry of Education, 1996

Professional Experience

Graduate Assistant Lecturer, Department of Computer Science, Texas A&M University (Fall 2002 – Present)

- Instructor for CPSC 311 Analysis of the Algorithms
- Topics and the course material can be found at the course website:
<http://parasol.tamu.edu/people/burchanb/Courses/311/>

Research Assistant, Department of Computer Science, Texas A&M University (1997 – Present)

- Worked on Randomized Probabilistic Roadmap (PRM) algorithms for motion planning (MP).
- Applied randomized motion planners to molecular docking.
- Designed and implemented randomized motion planners for deformable objects.
- Developed rule-based roadmaps for dynamic group behaviors.

- Researched cooperative man–machine motion planning utilizing haptic input devices (PHAN-ToM 3 dof and 6 dof).
- Implemented visualization tools for motion planners (used VTK, Tcl/Tk, OpenGL, GLUT, MFC, Xt, Motif and Entropic speech recognition library).

System Administrator, Department of Computer Science, Texas A&M University (1998 – Present)

- Administrated IRIX, Linux and Windows NT systems.
- Installed and administrated network services including NIS, NFS, web and database servers.
- Developed internet and intranet applications with Perl, PHP and MySQL.

Teaching Assistant, Department of Computer Engineering, METU, (1994 – 1996)

- Research topic: neural networks.
- Lab instructor for microprocessors and several programming language classes

Software Engineer, Mona Yazilim, Istanbul, Turkey (Summer 1993)

- Developed database software for banking industry

Software Engineer, Halici Yazilim, Ankara, Turkey (Summer 1992)

- Developed Computer Aided Teaching software

Publications in Refereed Journals and Conferences

- [1] O. Burchan Bayazit, Guang Song, Nancy M. Amato, “Enhancing Randomized Motion Planners: Exploring with Haptic Hints,” in *Autonomous Robots Journal*, Special Issue on Personal Robotics, **10**(2), 2001, pp. 163–174. (Journal version of [8])
- [2] Nancy M. Amato, O. Burchan Bayazit, Lucia K. Dale, Christopher Jones, Daniel Vallejo, “Choosing Good Distance Metrics and Local Planners for Probabilistic Roadmap Methods,” *IEEE Transactions on Robotics and Automation*, **16**(4), August 2000, pp. 442–447. (Journal version of [9])
- [3] O. Burchan Bayazit, Jyh-Ming Lien, Nancy M. Amato, “Better Group Behaviors in Complex Environments using Global Roadmaps” *Proceedings of the 2002 Artificial Life (ALIFE): The 8th International Conference on the Simulation and Synthesis of Living Systems*, December 2002, To appear.
- [4] O. Burchan Bayazit, Jyh-Ming Lien, Nancy M. Amato, “Better Flocking Behaviors using Rule-Based Roadmaps,” *Proceedings of the Workshop on Algorithmic Foundations of Robotics (WAFR)*, December 2002, To appear.
- [5] O. Burchan Bayazit, Jyh-Ming Lien, Nancy M. Amato, “Roadmap-Based Flocking for Complex Environments,” *Proceedings of the 2002 Pacific Graphics*, October 2002, To appear.
- [6] O. Burchan Bayazit, Jyh-Ming Lien, Nancy M. Amato, “Probabilistic Roadmap Motion Planning for Deformable Objects,” *Proceedings of the 2002 IEEE International Conference on Robotics and Automation (ICRA)*, May 2002, pp. 2126–2133.
- [7] O. Burchan Bayazit, Guang Song, and Nancy M. Amato, “Ligand Binding with OBPRM and User Input,” *Proceedings of the 2001 IEEE International Conference on Robotics and Automation (ICRA)*, May 2001, pp. 954–959.
- [8] O. Burchan Bayazit, Guang Song, Nancy M. Amato, “Enhancing Randomized Motion Planners: Exploring with Haptic Hints,” *Proceedings of the 2000 IEEE International Conference on Robotics and Automation (ICRA)*, April 2000, pp. 529–536.

- [9] Nancy M. Amato, O. Burchan Bayazit, Lucia K. Dale, Christopher Jones, Daniel Vallejo, “Choosing Good Distance Metrics and Local Planners for Probabilistic Roadmap Methods,” *Proceedings of the 1998 IEEE International Conference on Robotics and Automation (ICRA)*, May 1998, pp. 630-637.
- [10] Nancy M. Amato, O. Burchan Bayazit, Lucia K. Dale, Christopher Jones, Daniel Vallejo, “OBPRM: An Obstacle-Based PRM for 3D Workspaces,” *Proceedings of the Workshop on Algorithmic Foundations of Robotics (WAFR)*, March 1998, pp. 155-168.

Other Publications and Posters

- [11] O. Burchan Bayazit, “Choosing Good Distance Metrics and Local Planners for Probabilistic Roadmap Methods,” *M.S. Thesis, Department of Computer Science*, 1998.
- [12] O. Burchan Bayazit, Guang Song, Nancy M. Amato, “Ligand Binding with OBPRM and Haptic User Input: Enhancing Automatic Motion Planning with Virtual Touch,” *Currents in Computational Molecular Biology*, ed. *El-Mabrouk, Lengauer, Sankoff*, Les Publications CRM, Montreal, Canada, April 2001. Also poster presented at *Research on Comp. Mol. Biology (RECOMB) 2001*.
- [13] O. Burchan Bayazit, “Force Feedback Applications in Motion Planning,” Presentation at *Symposium on Computer Graphics & Digital Art, TEXGRAPH’00*, Texas A&M University, May 2000.
- [14] Nancy M. Amato, O. Burchan Bayazit, Guang Song, “Providing Haptic ‘Hints’ to Automatic Motion Planners,” *Proceedings of the 4th PHANTOM User’s Group Workshop (PUG’99)*, Dedham, MA, October 1999.
- [15] Nancy M. Amato, O. Burchan Bayazit, Kyunghwan Kim, Wookho Son, Guang Song, “Co-operative Motion Planning: Providing Hints to Automatic Motion Planners,” Presentation at *Workshop on Motion Support in Virtual Prototyping*, Stanford University, May 1999
- [16] O. Burchan Bayazit, Levent Erkok, Okan Uludag, Fatos Yarman Vural, “Gray Level Texture Generation by Binary Markov Random Field Model with Morphological Operations,” Technical Report 95-10, Department of Computer Engineering, Middle East Technical University, July 1995.

Undergraduate Research Projects Supervised

Mr. Omer Onur Dogan, Junior EE major, Bogazici Univ., Turkey. Research Internship at Texas A&M Univ., Summer 2001. Currently a graduate student at UPenn.

Mr. Rick Stover, Freshman CE major, 11/00–05/01.

Ms. Shawna Miller, Sophomore CE major, 10/99–05/00. Currently a graduate student at Texas A&M Univ.

Mr. Chris Jones, Junior CE major, 08/97–05/98. Currently a Ph.D. student at USC.

Languages

C/C++, Pascal, FORTRAN, Perl

User Interface, Graphics and Virtual Reality

OpenGL, GLUT, Tcl/Tk, VTK, Motif, Xt, Qt, Ghost Haptic Library,
Entropic graphVite/HTK Speech Recognition Library

Web and Database

PHP, Javascript, SQL

Operating Systems

VM, VMS, DOS, OS/2, Windows, MacOS, UNIX (IRIX, Solaris, OSF/1, HP-UX, Linux)

Activities

IEEE Student Member

METU Computer Society, Vice President, 1992–1994

TAMU Turkish Student Association, Social Secretary, 1996–1998

Writer for Turkish Technology Site, TeknoTurk, 2000–2001

References

Available upon request