Dawen Xie

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Education

M.S. in Computer Engineering, Dept. of Computer Science, Texas A&M University, College Station, TX 08/2007
Thesis: Design and Implementation of a Departmental Information Management System
Advisor: Nancy Amato

B.S. in Computer Science, Dept. of Computer Sicence, Nankai University, Tianjin, P.R. China 06/1999

Professional Experience

Research Scientist, NSSAC, BII, University of Virginia 11/2018 – present

- Design and lead the development of COVID-19 Surveillance Dashboard which has been used by 1.2 million users from over 220 countries `https://nssac.bii.virginia.edu/covid-19/dashboard/`.
- Core member in building NSSAC's Synthetic Information pipeline.

Senior Research Associate, NDSSL, BI, Virginia Tech 05/2014 – 10/2018

Research Associate, NDSSL, VBI, Virginia Tech 05/2011 – 05/2014

- Take an active role in a team environment on data preparation, generation, analysis and visualization.
- Lead NSSAC/NDSSL's effort on visual analytics using GIS techniques.
- Work on PATRIC project `https://www.patricbrc.org/`.
- Design and implement NDSSL Content Management System (CMS).

Information Technology Specialist II, Department of PPWS, Virginia Tech 01/2007 – 05/2011

- Worked as the department's sole network/system administrator by providing technical support for faculty, staff and students. Developed and maintained departmental websites. Designed and developed specialized database and web-compatible interfaces in support of research and extension programs in the department.

Graduate Assistant, Department of Computer Science, Texas A&M University 11/2005 – 01/2007

- Worked as the lead developer, project manager (manage two other graduate assistants and one undergraduate programmer) and database administrator for a departmental information management system. The goal for this system is to move all operations within the department on-line. It includes five main applications: graduate admission (application submission, reference letter submission, review and notification), graduate student tracking, annual Ph.D. review, faculty search and financial support tracking. In the first year, the system was used by over 9000 users.

Research Assistant, Department of Computer Science, Texas A&M University 09/2002 – 11/2005

- Designed and implemented "the Protein Folding Server" (joint work with two other graduate students). This server is a web application that uses a new computational technique developed in Parasol lab to map a protein's potential landscape. It generates transitional motions of proteins according to user's requests.
- Proposed a framework which automatically determines an appropriate roadmap size for a given motion planning problem. Worked on motion planning problem for systems with closed kinematics chains and its applications.

Research Assistant, Department of Computer Science, Nankai University 09/1999 – 02/2001

- Worked on different projects in E_commerce.

Computing Experience

GIS: ArcGIS Desktop, ArcGIS Server, ArcGIS API for JavaScript, PostGIS

Web and Database: PHP, HTML, JavaScript, Oracle, PostgreSQL, MySQL, SQL, Apache

Programming Languages: Python, Perl, Shell script

Award

First place in the NIEHS Climate Change and Environmental Exposures Challenge, for PIE Viz. I'm the only software developer in the team. 02/2016

Employee of the Month, College of Agriculture and Life Science, Virginia Tech 06/2008

Publications

Google Scholar: `https://scholar.google.com/citations?user=ssjTBO0AAAAJ`

"Data-driven scalable pipeline using national agent-based models for real-time pandemic response and decision support", Parantapa Bhattacharya et al., in The International Journal of High Performance Computing Applications, 37(1), pp. 4-27, January 2023.

"AI-Driven Agent-Based Models to Study the Role of Vaccine Acceptance in Controlling COVID-19 Spread in the US", Parantapa Bhattacharya et al., in 2021 IEEE International Conference on Big Data (Big Data), pp. 1556-1574, December 2021.

"High performance agent-based modeling to study realistic contact tracing protocols", Stefan Hoops et al, in *2021 Winter Simulation Conference (WSC)*, pp. 1-12, December 2021.

"From 5vs to 6cs: Operationalizing epidemic data management with covid-19 surveillance", Akhil Sai Peddireddy, Dawen Xie, Pramod Patil, Mandy L Wilson, Dustin Machi, Srinivasan Venkatramanan, Brian Klahn, Przemyslaw Porebski, Parantapa Bhattacharya, Shirish Dumbre, Erin Raymond, Madhav Marathe, in *2020 IEEE International Conference on Big Data (Big Data)*, pp.1380-1387, December 2020.

"The PATRIC Bioinformatics Resource Center: expanding data and analysis capabilities", James J. Davis et al., in *Nucleic acids research*, 48(D1), pp. D606-D612, Januarary 2020.

"Effect of modelling slum populations on influenza spread in Delhi", Jiangzhuo Chen, Shuyu Chu, Youngyun Chungbaek, Maleq Khan, Christopher Kuhlman, Achla Marathe, Henning Mortveit, Anil Vullikanti, Dawen Xie, BMJ Open, 6(9): e011699, September 2016.

"Planning and Response in the Aftermath of a Large Crisis: An Agent-based Informatics Framework", Christopher L. Barrett, Keith R. Bisset, Shridhar Chandan, Jiangzhuo Chen, Youngyun Chungbaek, Stephen G. Eubank, Yaman Evrenosoglu, Bryan Lewis, Kristian Lum, Achla Marathe, Madhav V. Marathe, Henning S. Mortveit, Nidhi K. Parikh, Arun Phadke, Jeffrey Reed, Caitlin Rivers, Sudip Saha, Paula Stretz, Samarth Swarup, James Thorpe, Anil Vullikanti, Dawen Xie, in *Proceedings of the 2013 Winter Simulation Conference*, Washington DC, December 2013.

"High-Performance Interaction-Based Simulation of Gut Immunopathologies with ENteric Immunity Simulator (ENISI)", Keith R. Bisset, Md. Maksudul Alam, Josep Bassaganya-Riera, Adria Carbo, Stephen Eubank, Raquel Hontecillas, Stefan Hoops, Yongguo Mei, Katherine V. Wendelsdorf, Dawen Xie, Jae-Seung Yeom, Madhav V. Marathe, in *26th IEEE International Parallel and Distributed Processing Symposium, IPDPS 2012*, pp. 48-59, May 2012.

"Incremental Map Generation (IMG)", Dawen Xie, Marco A. Morales A., Roger Pearce, Shawna Thomas, Jyh-Ming Lien, Nancy M. Amato, in *Algorithmic Foundation of Robotics VII* , Springer Tracts in Advanced Robotics, Volume 47, pp. 53-68, 2008.

"Iterative Relaxation of Constraints: A Framework for Improving Automated Motion Planning." Burchan Bayazit, Dawen Xie, and Nancy M. Amato, in *Proceedings of the 2005 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pp.586-593, Sep 2005.

"A Kinematics-Based Probabilistic Roadmap Method for High DOF Closed Chain Systems." Dawen Xie and Nancy M. Amato, in *Proceedings of the 2004 IEEE International Conference on Robotics and Automation*, pp. 473-478, Apr 2004.