

# YING WANG

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## EDUCATION

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- Texas A&M University** *Sep. 2017 - Present*  
Ph.D. in Computer Science & Engineering  
Advisor: Dr. Shinjiro Sueda  
Research Interests: Computer Graphics, Biomechanical Simulation
- Washington University in St. Louis** *Sep. 2015 - Jul. 2017*  
M.S. in Computer Science & Engineering
- Beijing University of Posts and Telecommunications** *Sep. 2011 - Jul. 2015*  
B.S. in Mechanical Engineering & Automation

## EXPERIENCE

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- Texas A&M University - Research Assistant** *Aug. 2017 - Present*
- Research on a novel formulation of articulated rigid body dynamics which allows any combination of reduced/maximal constraints and two-way coupling between a deformable body and the articulated rigid bodies.
  - Research on muscle inertia in musculoskeletal simulation and implement a machine-learning based approach for computing the missing terms in the equations of motion that takes into consideration muscle inertia and wrapping.
- Washington University in St. Louis - Research Assistant** *Aug. 2016 - Feb. 2017*
- Researched on supervised learning for approximation ideal observers.
  - Applied deep learning methods to the classification of medical imaging that simulates the performance of hotelling observer.
- Chinese Academy of Sciences - Research Assistant** *Jul. 2014 - May. 2015*
- Researched on mesh segmentation by cascaded region agglomeration.
  - Applied machine learning methods such as K-means to obtain the 3D mesh decomposition and achieved cascaded merging based on features between neighboring super-patch.

## PUBLICATIONS

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- **Wang, Y.**, Weidner, N. J., Baxter, M. A., Hwang, Y., Kaufman, D. M., and Sueda, S. REDMAX: Efficient & Flexible Approach for Articulated Dynamics. *ACM Trans. Graph.*, 38(4) 104:1-104:10, 2019.

## PROJECTS

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### Football Bingo

#### Ruby on Rails ◊ SaaS ◊ Software Engineering

A mobile/web application to be hosted via 12thmanlive.com, devoted to allow football fans the opportunity to engage with each other and the game in real-time. Every player will have one free bingo card for a sports game, the card will contain carefully selected 'chips' defining a particular condition that if true about the respective game, will be awarded to the player.

## Realtime Fluid Simulation

C++ ◊ OpenGL

Developed a simulator for several CFD algorithms (such as an SPH system) and visualized 2D/3D fluid simulations in realtime with interactive control.

## Physically Based Modeling Lab Series

C++ ◊ OpenGL

Particle System: generates large-scale particles with initial attributes and interesting forces.

Flocking System: produces flocking, obstacle avoidance, and goal orientation behavior.

Springy Structures: cloth and FEM simulation which handles collision detection and response.

## Web Development Lab Series

PHP ◊ JavaScript ◊ AJAX ◊ jQuery ◊ Node.JS ◊ Socket.IO ◊ MongoDB ◊ Express

Online Calender: supports month-to-month view, event creation/deletion/modification.

Multi-room Chat Service: contains a main lobby where users can communicate with each other.

Online Shopping: allows users to add/delete/edit/review all merchandise.

## Computer Vision Lab Series

C++ ◊ OpenGL

Feature detector: compares images with differences in position, orientation, and illumination.

Image Stitcher: creates 360 degree panoramas.

Eigenfaces: achieves face verification, recognition, and detection.

Single View Modeling: creates 3D models from a single image.

## Corneal Ulcer Detector

OpenCV ◊ Biomedicine ◊ Geometric Processing

Developed a tool with GUI for automatic segmentation and measurement of corneal ulcers and epithelial defects in input photos of patients.

## Tic-Tac-Toe Robot with Flexible Control

OpenCV ◊ Solidworks ◊ Embedded System & Microcontroller

Assembled a robot and simulated the motion in Solidworks. Implemented a C program to control the movement and achieve the image recognition process in MATLAB and OpenCV in AVR Studio.

## TECHNICAL STRENGTHS

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- Programming: C/C++, Python, MATLAB, Mathematica, Ruby on Rails, JavaScript, PHP
- Tools/Frameworks: OpenGL, Eigen, Mosek, Tetgen, PyTorch, Blender, AutoCAD, Solidworks

## HONORS & AWARDS

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- Grace Hopper Student Scholarship 2019
- CSE Travel Awards 2019
- Grace Hopper Student Scholarship 2018
- Excellent Student Scholarship of BUPT 2014
- Third Prize of China Robot Contest and the RoboCup National Contest 2014
- Second Prize & Best Display Award of Undergraduate Innovation Experiment Program 2014

## CONFERENCE TALKS

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- **SIGGRAPH 2019** (with Nicholas J. Weidner) *REDMAX: Efficient & Flexible Approach for Articulated Dynamics*, Los Angeles, CA 2019