Gates Computer Science
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# Ante Qu

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## Education

**Stanford University** — Stanford, CA
Ph.D. in Computer Science, GPA: 4.30 — Sept 2016 – Present
Advisor: Doug L. James

**Princeton University** — Princeton, NJ
AB Physics, *magna cum laude,* GPA: 3.85 — Sept 2011 – June 2015

## Research Interests

My interests are in physics simulations for computer graphics. I work on yarn-level simulations of cloth, contact modeling, and sound synthesis.

## Journal Publications and Refereed Conference Proceedings

Rundong Wu, Joy Xiaoji Zhang, Jonathan Leaf, Xinru Hua, **Ante Qu**, Claire Harvey, Emily Holtzman, Joy Ko, Brooks Hagan, Doug James, François Guimbretière, and Steve Marschner
"Weavecraft: An Interactive Design and Simulation Tool for 3D Weaving."
To Appear in ACM Transactions on Graphics. (SIGGRAPH Asia 2020)

Alejandro M. Castro*, **Ante Qu***, Naveen Kuppuswamy, Alex Alspach, and Michael Sherman
"A Transition-Aware Method for the Simulation of Compliant Contact with Regularized Friction."
IEEE Robotics and Automation Letters (RA-L). 5, 2, pp 1859–1866 (ICRA 2020)

**Ante Qu** and Doug L. James.
"On the Impact of Ground Sound."
Proceedings of the 22nd International Conference on Digital Audio Effects (DAFx 2019)

Jui-Hsien Wang, **Ante Qu,** Timothy R. Langlois, and Doug L. James.
"Toward Wave-based Sound Synthesis for Computer Animation."
ACM Transactions on Graphics. 37, 4, Article 109 (SIGGRAPH 2018)

Gabriel Cirio, **Ante Qu,** George Drettakis, Eitan Grinspun, and Changxi Zheng.
"Multi-Scale Simulation of Nonlinear Thin-Shell Sound with Wave Turbulence."
ACM Transactions on Graphics. 37, 4, Article 110 (SIGGRAPH 2018)

## Non-Refereed Manuscripts

**Ante Qu,** Alexandre Goy, and Jason Fleischer.
"Phase Retrieval Using Optimized Conjugated Illumination."
In Computational Optical Sensing and Imaging, pp. CTh1E-3. Optical Society of America (2015).
*Oral Presentation at the OSA Computational Optical Sensing and Imaging (COSI) conference in 2015.*

**Ante Qu,** Stephane Ethier, Eliot Feibush, and Roscoe White.
"Multi-threaded acceleration of ORBIT code on CPU and GPU with minimal modifications."
Bulletin of the American Physical Society 58 (2013).
*Poster Presentation at the APS Division of Plasma Physics 2013 and published as PPPL report 4996.*

## Industry Experience

**Toyota Research Institute,** Research Scientist Intern and Contractor, Dynamics and Simulation — Cambridge, MA
- Worked on a method to reliably simulate compliant contact for manipulation and grasping — Jun 2019 – Jun 2020
- Improved first-order implicit integrators in Drake, an open-source dynamics toolbox for robotics

**Adobe,** Research Scientist Intern, Creative Intelligence Lab — Seattle, WA
- Prototyped a fast acoustic transfer scheme that uses shape data to approximate modal sound amplitudes — Summer 2018
- Generated a dataset of acoustic transfer solves using the Boundary Element Method (BEM)

**Microsoft,** Software Engineer (Full Time), Office Graphics (graphics features in MS Office suite) — Redmond, WA
- Worked in a small crew to enable Scalable Vector Graphics (SVG) file insertion and editing, a cross-platform cross-product feature — Aug 2015 – Aug 2016
- Prototyped a user-facing graphics feature that led to a patent (US10621763B2)

**NVIDIA,** Systems Software Intern, CUDA Chips team (Pascal and Volta) — Santa Clara, CA
- Designed a test plan for a Pascal hardware performance-optimization feature — Summer 2014
- Wrote tests to validate the functionality of a new math operation, FP64 atomic add

## Selected Awards and Honors

**National Science Foundation Graduate Research Fellowship (NSF GRFP)** — 2015 (Declined), 2017

**William L. Putnam Competition 2012 Honorable Mention (top 84)** — 2013

**International Physics Olympiad (IPhO) Gold Medalist** — 2011

## Service and Teaching

**IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020),** Reviewer — 2020

**Eurographics & Eurovis (EGEV 2020),** Reviewer — 2020

**Stanford University,** Teaching Assistant

CS 205A Mathematical Methods for Robotics, Vision, and Graphics — Winter 2018
- Led weekly recitations and office hours to solidify student understanding
- Developed written and programming assignments, exam questions, and solutions
- Received the SCPD Remote Student Teaching Excellence Award

CS 348C Computer Graphics: Animation and Simulation — Autumn 2017
- Developed programming assignments on constrained dynamics and 2D APIC/FLIP fluid simulations

**Stanford Computer Graphics Lunch (GCafe),** Social Chair — 2017

**Mercer County Math Circle,** Co-President — 2014 – 2015

## References


**Doug L. James**
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**Changxi Zheng**
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