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 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 Simulation and Design Tool for 3D Weavers."
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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