Ben Jones

Associate Professor, Lecturer
Co-Interim Director: Master of Software Development Program
University of Utah School of Computing

benjones@cs.utah.edu
cs.utah.edu/~benjones

Research Interests

Physics based animation, simulation control, scientific computing, character animation.

Education

University of Utah — Salt Lake City, UT
PhD Computing, Scientific Computing Track — *Aug 2011 - Jul 2015*

- Commitee: Adam Bargteil (chair), Mike Kirby, Cem Yuksel, Ladislav Kavan, Nils Thuerey
- Thesis: **Artist-Guided Physics-Based Animation**
- Member Graduate Student Advisory Committee

University of British Columbia — Vancouver, BC
MSc Computer Science, Computer Graphics Specialization — *Sep 2009 - Jul 2011*

- Supervisor: Michiel van de Panne
- Thesis: **Rising Motion Controllers for Physically Simulated Characters**
- Computer Science International Merit Scholarship ($10,000)
- Outstanding Graduate Teaching Assistant Award

Colorado School of Mines — Golden, CO
BS Computer Science, BS Engineering Physics — *Aug 2005 - May 2009*
4.0 GPA, *summa cum laude*

- Outstanding Graduate Award in Computer Science
- Outstanding Graduate Award in Engineering Physics
- Ryan Sayers Memorial Award
- Tau Beta Pi Honor Society Cataloguer
- Linux Users Group Vice President
- Member Technology in the Classroom Committee

Awards and Honors

Best Presentation Award, ACM SIGGRAPH Motion in Games 2014

Best Student Paper Award, ACM SIGGRAPH Motion in Games 2013

Dean's Teaching Commendation, University of Utah Fall 2018, Spring 2020, Fall 2020

Publications

Thanh Son Nguyen, Zvonimir Rakamaric, **Ben Jones** [SPIN 2022]
Synthesis of Rigorous Floating-Point Predicates *Proceedings of 28th International Symposium on Model Checking of Software (SPIN)*, 2022

Xiaokai Li, Sheldon Andrews, **Ben Jones**, Adam Bargteil [I3D 2018]
Energized Rigid Body Fracture
Proc. ACM Comput. Graph. Interact. Tech. (ACM SIGGRAPH Symposium on 3D Graphics and Games), Montreal, Canada, 2018

Ben Jones, Joshua Levine, Tamar Shinar, Adam Bargeil [MiG 2017]
Efficient Collision Detection for Example-Based Deformable Bodies
ACM SIGGRAPH conference on Motion in Games, Barcelona, Spain, 2017

Michael Falkenstein, **Ben Jones**, Joshua Levine, Adam Bargeil [MiG 2017]
Reclustering for Large Plasticity in Clustered Shape Matching
ACM SIGGRAPH conference on Motion in Games, Barcelona, Spain, 2017

Ben Jones, Nils Thuerey, Tamar Shinar, Adam Bargeil [SIGGRAPH 2016]
Example-Based Plastic Deformation of Rigid Bodies
ACM Transactions on Graphics (SIGGRAPH 2016) volume 35(4), 2016

Ben Jones, April Martin, Joshua A. Levine, Tamar Shinar, Adam Bargteil [I3D 2016]
Ductile Fracture for Clustered Shape Matching
ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games, Redmond, WA, 2016

Ben Jones, April Martin, Joshua A. Levine, Tamar Shinar, Adam Bargteil [MiG 2015]
Clustering and Collision Detection for Clustered Shape Matching
ACM SIGGRAPH Conference on Motion in Games, Paris, France, 2015

Adam Bargteil and **Ben Jones** [MiG 2014]
Strain Limiting for Clustered Shape Matching
ACM SIGGRAPH Conference on Motion in Games, Los Angles, CA, 2014
Winner of Best Presentation Award

Ben Jones, Stephen Ward, Ashok Jallepalli, Joseph Perenia, Adam Bargteil [ToG 2014]
Deformation Embedding for Point-based Elastoplastic Simulation
ACM Transactions on Graphics, March 2014, Vol. 33, No. 2
Presented at SIGGRAPH 2014

Ben Jones, Jovan Popović, James McCann, Wilmot Li, Adam Bargteil [CAVW 2014]
Dynamic Sprites: Artistic Authoring of Interactive Animations
Computer Animation and Virtual Worlds, 2014
Special edition featuring highlights from Motion in Games 2013

Ben Jones, Jovan Popović, James McCann, Wilmot Li, Adam Bargteil [MiG 2013]
Dynamic Sprites
ACM SIGGRAPH Conference on Motion in Games, Dublin, Ireland, 2013
Winner of Best Student Paper Award

David Stuart, Joshua Levine, **Ben Jones**, Adam Bargteil [MiG 2013]
Automatic Construction of Coarse, High-Quality Tetrahedralizations that Enclose and Approximate Surfaces for Animation
ACM SIGGRAPH Conference on Motion in Games, Dublin, Ireland, 2013

Stelian Coros, Andrej Karpathy, **Ben Jones**, Lionel Reveret, Michiel van de Panne [SIGGRAPH 2011]
Locomotion Skills for Simulated Quadrupeds
ACM Transactions on Graphics (SIGGRAPH 2011), volume 30 (4), 2011

External Service

Program chair for ACM SIGGRAPH Conference on Motion, Interaction, and Games 2018 (MIG 2018) with Jehee Lee.

Program committee member for ACM SIGGRAPH Conference on Motion in Games, 2015-2017, 2019-2022.

Paper reviewer for SIGGRAPH, SIGGRAPH Asia, ACM SIGGRAPH Conference on Motion in Games, IEEE Transactions on Visualization and Computer Graphics, Eurographics, Graphical Models, The Visual Computer Journal, and IEEE Journal of Biomedical and Health Informatics.

Departmental Service

Member Lecturing Faculty Hiring Committee (Spring 2019, Spring 2020, Spring 2021)
Member Bachelors of Software Development Degree Committee
Chair of Utah MSD Hiring Committee (Spring 2018)
Member of Utah MSD Admissions committee (Spring 2018, 2019)
Chair of DU CS Undergraduate Committee (August 2016-July 2017)
Organizer of DU CS Graduate Research Seminar (August 2016-June 2017)

Work Experience

University of Utah Salt Lake City, UT
Associate Professor, Lecturer *July 2017 - present*

- Performed curriculum development and teaching in Masters of Software Development Program (MSD)
- Responsible for teaching 5 courses per year, advising capstone projects, and co-organizing the MSD seminar
- Member of admissions committee
- Promoted from Assistant Professor, Lecturer in 2022

University of Denver Denver, CO
Assistant Teaching Professor *Aug 2015 - July 2017*

- Responsible for teaching 6 computer science courses per year, advising, and department service

University of Utah Salt Lake City, UT
Research Assistant under Dr. Adam Bargteil *Aug 2011 - Jul 2015*

- Performed research on physics based animation
- Developed techniques for artist-guided simulation of deformable bodies

Salt Lake Lions Salt Lake City, UT
Athlete *Dec 2013 - Jul 2014*

- Played the inaugural season of the Lions in the American Ultimate Disc League
- Scored 10 goals, threw 10 assists, and recorded 8 passes defensed in 13 games
- Performed community outreach for the team

Univeristy of Utah Salt Lake City, UT
Instructor *Aug 2013 - Dec 2013*

- Taught an introductory programming course using the "flipped classroom" technique
- Created video lectures and active learning exercises to improve student understanding

Adobe Systems Creative Technologies Lab Seattle, WA
Research Intern *May 2012 - Aug 2012*

- Designed and prototyped a new physics-based animation system
- Work was published and presented at Motion in Games, winning the Best Student Paper Award
- Extended version of the work was published in Computer Animation and Virtual Worlds

University of British Columbia Vancouver, BC
Research Assistant under Dr. Michiel van de Panne *May 2010 - Jun 2011*

- Performed research on physics based character animation

CSM Mechanical Engineering Department Golden, CO
Research Assistant under Dr. Anthony Petrella *May 2009 - Aug 2009*

- Contributed to development of real-time X-ray simulation system
- Worked with motion capture systems, graphics pipeline and computer vision libraries

Toilers Research Group (CSM) Golden, CO
Research Assistant under Dr. Tracy Camp *Jan 2009 - May 2009*

- Debugged and extended iNSpect network visualization tool
- Created test simulations using NSNAM network simulator

US Geological Survey Golden, CO
Web Programmer *Jun 2008 - Dec 2008*

- Created and maintained interactive administrative website for earthquake analysts
- Implemented GUI interface for querying and modifying user generated earthquake report database

Teaching Experience

Associate Professor, Lecturer University of Utah

CS 2420: Introduction to Algorithms and Data Structures	*Spring 2023*
CS 4400: Computer Systems	*Spring 2021, 2022*
CS 6010 (MSD): Introduction to Software Development	*Fall 2017, 2018, 2019, 2020*
CS 6011 (MSD): Computer Programming	*Fall 2017, 2018, 2019, 2020*
CS 6012 (MSD): Data Structures and Algorithms	*Fall 2022*
CS 6013 (MSD): Systems 1 (Computer Architecture and Operating Systems)	*Spring 2018, 2019*
CS 6014 (MSD): Systems 2 (Computer Networks and Security)	*Spring 2018 (co-taught), 2019-2023*
CS 6017 (MSD): Data Analysis and Visualization	*Summer 2018, 2019, 2020, 2021*
CS 6019 (MSD): Master of Software Development Project (capstone advising)	*Fall 2018, 2019, 2020, 2021*

Assistant Teaching Professor University of Denver

COMP 2673: Introduction to Computer Science III (Data Structures in Java)	*Spring 2017*
COMP 2355: Introduction to Systems Programming	*Spring 2017*
COMP 2355: Introduction to Systems Programming	*Winter 2017*
COMP 1672: Introduction to Computer Science II	*Winter 2017*
COMP 1672: Introduction to Computer Science II	*Fall 2016*
COMP 1101: Analytical Inquiry (for nonmajors)	*Fall 2016*
COMP 1101: Analytical Inquiry (Online, for nonmajors)	*Summer 2016*
COMP 3704: Special Topics in Scientific Computing/Numerical Methods	*Spring 2016*
COMP 2673: Introduction to Computer Science III (Data Structures in Java)	*Spring 2016*
COMP 1672: Introduction to Computer Science II (2 sections)	*Winter 2016*
COMP 1571: Procedural Programming	*Fall 2015*
COMP 1671: Introduction to Computer Science I	*Fall 2015*

Instructor University of Utah

EAE 1410: Introduction to Object Oriented Programming	*Fall 2013*

Teaching Assistant University of Utah

CS 5600: Computer Graphics	*Spring 2012*
CS 1000: Engineering Computing (Matlab and VBA)	*Fall 2011*

Teaching Assistant University of British Columbia

CPSC 213: Introduction to Computer Systems	*Spring 2011*
CPSC 311: Definition of Programming Languages	*Fall 2010*
CPSC 313: Computer Hardware and Operating Systems	*Spring 2010*
CPSC 221: Basic Algorithms and Data Structures	*Fall 2009*

Teaching Assistant Colorado School of Mines

PHGN 100: Introductory Mechanics	*Fall 2006*

Community Service

Ultimate Coach, SLC West High School Krakens (Mixed) and Gorillaz (Girls) Fall 2017 - Spring 2021