7 Sep 2019

Chad McKell

CONTACT

Address	Conrad Prebys Music Center 9500 Gilman Dr MC 0099 La Jolla, CA 92093-0099
Phone	+1 661 289 4215
Email	mckell.chad@gmail.com
GitHub	github.com/chadmckell
Website	chadmckell.com
Research	computational musical acoustics

EDUCATION

9/19–	**Ph.D., University of California San Diego**, Computer Music Research: computational sound synthesis (advisors TBD).
9/16–10/17	**M.S., University of Edinburgh**, Acoustics and Music Technology
8/09–12/15	**M.S., Wake Forest University**, Physics
6/02–8/09	**B.S., Brigham Young University**, Biophysics

PROFESSIONAL EMPLOYMENT

7/18–7/19	**Applied Research in Acoustics**, R&D Scientist Culpeper, Virginia. Developed physics-based signal processing algorithms for naval sonar systems. Processed sound simulations and recordings using methods such as matched filtering and beamforming. Researched sound propagation and reverberation.
10/14–8/16	**J.P. Morgan/Neovest**, Software Development Engineer in Test Orem, Utah. Developed Java-based automation software for J.P. Morgan's investment trading platform, Neovest. Created object-oriented unit tests to validate new features and locate software bugs.

ACADEMIC APPOINTMENTS

10/19–	**University of California San Diego**, Graduate Student Researcher (Music) La Jolla, California. Conduct computer music research under the supervision of Tom Erbe.
9/12–12/12	**University of North Carolina School of the Arts**, Adjunct Instructor (Physics) Winston-Salem, North Carolina. Designed and taught one course of college physics at a public arts conservatory. Prepared instructional materials, including a syllabus and exams.
9/09–9/11	**Wake Forest University**, Teaching Assistant (Physics) Winston-Salem, North Carolina. Taught introductory physics lab courses to undergraduate students. Courses included Newtonian mechanics and electromagnetism.
9/08–6/09	**Brigham Young University**, Tutorial Lab Assistant (Physics) Provo, Utah. Taught introductory physics concepts to undergraduate students. Topics included Newtonian mechanics, thermodynamics, modern physics, E&M, and optics.

CONSULTING

5/18–5/18	**Moog Music**: Audio effects development in C++ for digital and analog synthesizers.
4/17–9/17	**Lofelt**: Numerical vibration simulations and mathematical modeling. Algorithms adopted in the Razer Nari Ultimate headset, the world's first intelligent haptics-enabled gaming headset.

TEACHING EXPERIENCE

UNC School of the Arts

PHY 100	General College Physics. Fall 2012.

Wake Forest University

PHY 114L	General Physics II Laboratory. Winter 2010.
PHY 113L	General Physics I Laboratory. Fall 2009.

PUBLICATIONS

Journal Articles

(1) C. McKell and K. Bonin, "Optical corral using a standing-wave Bessel beam," *Journal of the Optical Society of America B*, Vol. 35, No. 8, 1910–1920, 2018.

Conference Proceedings

(2) C. McKell, "Sonification of Optically-Ordered Brownian Motion," Proceedings of the International Computer Music Conference (ICMC), Utrecht, Netherlands, September 2016.

Theses

(3) C. McKell, *Real-Time Physical Modeling for Haptic Feedback Rendering*, Final Project Dissertation, University of Edinburgh, Acoustics and Audio Group, 2017.

(4) C. McKell, *Finite-Difference Simulations of Speech with Wall Vibration Losses*, Special Project Dissertation, University of Edinburgh, Acoustics and Audio Group, 2017.

(5) C. McKell, *Confinement and Tracking of Brownian Particles in a Bessel Beam Standing Wave*, Master's Thesis, Wake Forest University, Department of Physics, 2015.

Technical Reports

(6) C. McKell, H. Conley, and D. Busath, "AFM Study of Structural Changes in Supported Planar DPPC Bilayers Containing General Anesthetic Isoflurane," Brigham Young University, Paper 827, 2010.

Conference Abstracts

(7) K. Bonin and C. McKell, "Tracking Brownian Particles in a Standing-Wave Bessel Beam 2D Optical Trap," SPIE: Optical Trapping and Optical Micromanipulation, XIV Meeting, 2017.