

Assistant Professor
Center for Computer Research in Music and Acoustics (CCRMA)
Department of Music (also Computer Science, by Courtesy)
Stanford University
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2009.6.14

Research Interests

Programming languages and real-time software systems for computer music; sound synthesis and analysis; mobile and social music, performance ensembles (e.g., laptop orchestras and mobile phone orchestra) and paradigms (e.g., live coding), software user interfaces; visualization; music information retrieval; new human-computer interaction; interactive audio over networks; methodologies for education at intersection of computer science and music.

Education

<u>Degree</u>	<u>Institution</u>	<u>Date</u>	<u>Field</u>
PhD	Princeton University Department of Computer Science <i>The Chuck Audio Programming Language: A Strongly-timed and On-the-fly Environ/mentality</i> Advisor: Perry R. Cook	2008	Computer Science
M.S.	Princeton University Department of Computer Science Advisor: Perry R. Cook	2003	Computer Science
B.S.	Duke University Department of Computer Science	2000	Computer Science
High School	Shawnee Mission South High School, Overland Park, KS	1996	-

Honors and Awards

The 2009 Creativity 50 Award.

Awarded annually to 50 individuals worldwide for creative thinking and doing in media, technology, and culture, Creativity Magazine, 2009.

The Silicon Valley 40 Under 40

Awarded annually to 40 individuals under 40 for innovation, San Jose Business Journal, 2009.

2006 ICMA/Swets & Zeitlinger Distinguished Paper Award

(with Ananya Misra and Perry Cook)

For: "TAPESTREA: Re-composing Natural Sounds"

Awarded annually to one paper at the International Computer Music Conference.

2004 ICMA Best Presentation Award

For: "The Audicle: A Context-sensitive, On-the-fly Audio Programming Environ/mentality"

Chosen from 210 research paper presentations, by vote from conferees ICMC 2004

Co-winner: 2004 ACM Multimedia Best Open-Source Software Competition

For: "ChucK : Programming Language for Real-time Audio and Multimedia"

Selected from 10 projects, by jury at ACM Multimedia 2004, New York.

2003 ICMA Best Presentation Award

For: "ChucK: A Concurrent, On-the-fly Audio Programming Language"

Chosen from 80 research paper presentations, by vote from conferees at ICMC 2003

Outstanding Undergraduate Teaching-Assistant Award, 2000

For: "Advanced Object-oriented Design" and "Computer Graphics"

Nominated and chosen by professors and students in Computer Science at Duke University

Publications

PhD Thesis

Wang, G. 2008. *The ChucK Audio Programming Language: A Strongly-timed and On-the-fly Environ/mentality*. PhD Thesis, Princeton University.

Book Chapter

Wang, G. "A History of Programming and Music". 2008. *Cambridge Companion to Electronic Music*. N. Collins and J. D'Esquivan Eds. Cambridge University Press.

Wang, G., G. Essl, and H. Penttinen. "The Mobile Phone Orchestra". 2009. *Oxford Handbook of Mobile Music*. S. Gopinath and J. Stanyek Eds. Oxford University Press. (*forthcoming*)

Wang, G. "Sonic Media: Creating Expressive Social Mediums on the iPhone". 2009. *Cambridge Companion to Electronic Music*. S. Gopinath and J. Stanyek Eds. Oxford University Press. (*forthcoming*)

Journal Articles

- Wang, G., D. Trueman, S. Smallwood, and P. R. Cook. 2008. "The Laptop Orchestra as Classroom." *Computer Music Journal*. 32(1):26-37.
- Smallwood, S., D. Trueman, P. R. Cook, and G. Wang. 2008. "Composing for Laptop Orchestra." *Computer Music Journal*. 32(1):9-25.
- Misra, A., G. Wang, and P. Cook. 2008. "Musical Tapestry: Re-composing Natural Sounds." *Journal of New Music Research*. 36(4):241-250. (Winner: 2006 ICMA Swets & Zietlinger Distinguished Paper Award)
- Kapur, A., G. Wang, P. Davidson, P. Cook. 2005. "Interactive Network Media: A Dream Worth Dreaming?" *Organized Sound*. 10(3): 209-219.

Conference Papers and Presentations

- Wang, G., P. R. Cook. 2003. "ChucK: A Concurrent, On-the-fly Audio Programming Language". In *Proceedings of the International Computer Music Conference*, pp. 217-225. Singapore, October 2003.
(winner: 2003 ICMA Best Presentation Award)
- Wang, G., P. R. Cook. 2004. "On-the-fly Programming: Using Code as an Expressive Musical Instrument". In *Proceedings of the International Conference on New Interfaces for Musical Expression*. Hamamatsu, Japan, June 2004.
- Wang, G., P. R. Cook. 2004. "ChucK: A Programming Language for On-the-fly, Real-time Audio Synthesis and Multimedia." In *Proceedings of ACM Multimedia*. New York City, October 2004.
(invited/co-winner: 2004 ACM Multimedia Open Source Software Competition)
- Wang, G., P. R. Cook. 2004. "Audicle: A Context-sensitive, On-the-fly Audio Programming Environment." In *Proceedings of the International Computer Music Conference*. pp. 256-263. Miami, November 2004.
(winner: 2004 ICMA Best Presentation Award)
- Wang, G., A. Misra, A. Kapur, and P. R. Cook. 2005. "Yeah ChucK It! => Dynamic Controllable Interface Mapping." In *Proceedings of the International Conference on New Interfaces for Musical Expression*. Vancouver, June 2005.
- Misra, A., Wang, G., and P. R. Cook. 2005. "SndTools: Real-time Audio DSP and 3D Visualization." In *Proceedings of the International Computer Music Conference*. Barcelona, September 2005.
- Wang, G., P. R. Cook, and A. Misra. 2005. "Designing and Implementing the ChucK Programming Language." In *Proceedings of the International Computer Music Conference*. Barcelona, September 2005.
- Wang, G., A. Misra, P. Davidson, and P. R. Cook. 2005. "Co-Audicle: A Collaborative Audio Programming Space." In *Proceedings of the International Computer Music Conference*. Barcelona, September 2005.

- Kapur, A., G. Tzanetakis, N. Virji-Babul, G. Wang, and P. R. Cook. "A Framework for Sonification of Vicon Motion Capture Data" *In Proceedings of the International Conference on Digital Audio Effects*. Madrid, September 2005.
- Wang, G., A. Misra, and P. R. Cook. 2006. "Building Collaborative interFaces in the Audicle." *In Proceedings of the International Conference on New Interfaces for Musical Expression*. Paris, June 2006.
- Misra, A., P. R. Cook, and G. Wang. 2006. "TAPESTREA: Sound Scene Modeling by Example" (*Sketch*) *ACM SIGGRAPH*. Boston, August 2006.
- Misra, A., P. R. Cook, and G. Wang. 2006. "A New Paradigm for Sound Design." *In Proceedings of the International Conference on Digital Audio Effects*. Montreal, October 2006.
- Salazar, S., G. Wang, and P. R. Cook. 2006. "miniAudicle and Chuck Shell: New Interfaces for Chuck Development and Performance." *In Proceedings of the International Computer Music Conference*. New Orleans, November 2006.
- Trueman, D., P. R. Cook, S. Smallwood, and G. Wang. 2006. "PLOrk: Princeton Laptop Orchestra, Year 1." *In Proceedings of the International Computer Music Conference*. New Orleans, November 2006.
- Fiebrink, R., G. Wang, and P. R. Cook. 2007. "Don't Forget the Laptop: Using Native Input Capabilities for Expressive Musical Control." *In Proceedings of the International Conference on New Interfaces for Musical Expression*. New York, June 2007.
- Wang, G., R., Fiebrink, and P. R. Cook. 2007. "Combining Analysis and Synthesis in the Chuck Programming Language." *In Proceedings of the International Computer Music Conference*. Copenhagen, 2007.
- Essl, G., G. Wang, and M. Rohs. 2008. "Developments and Challenges Turning Mobile Phones into Generic Music Performance Platforms." *In Proceedings of Mobile Music Workshop*. Vienna, 2008.
- Fiebrink, R., G. Wang, and P. R. Cook. 2008. "Foundations for On-the-fly Learning in the Chuck Programming Language." *In Proceedings of the International Computer Music Conference*. Belfast, 2008.
(winner: 2008 ICMA Best Presentation Award)
- Wang, G., G. Essl, and H. Penttinen. 2008. "MoPhO: Do Mobile Phones Dreams of Electric Orchestras?" *In Proceedings of the International Computer Music Conference*. Belfast, 2008.
- Fiebrink, R., G. Wang, and P. R. Cook. 2008. "Support for MIR Prototyping and Rea-time Applications of the Chuck Programming Language." *In Proceedings of the International Conference on Music Information Retrieval*. Philadelphia, 2008.
- Caceres, J., R. Hamilton, D. Iyer, C. Chafe, and G. Wang. 2008. "China on the Edge: Explorations in Network-based Performance." *In Proceedings of the International Conference on Digital Arts (ARTECH)*. Porto, Portugal, 2008.

- Fiebrink, R., P. Cook, S. Smallwood, D. Trueman, and G. Wang. 2009. "Laptop Orchestras and Machine Learning in Real-time Music Performance." *ACM CHI 2009, Computational Creativity Support Workshop*. Boston, 2009.
- Wang, G. 2009. "Designing Smule's iPhone Ocarina." *In Proceedings of the International Conference on New Interfaces for Musical Expression*. Pittsburgh, 2009.
- Wang, G., N. Bryan, J. Oh, and R. Hamilton. 2009. "Stanford Laptop Orchestra (SLOrk)." *In Proceedings of the International Computer Music Conference*. Montreal, 2009.
- Wang, G., G. Essl, J. Smith, S. Salazar, P. Cook, R. Hamilton, R. Fiebrink, J. Berger, D. Zhu, M. Ljungstrom, A. Berry, J. Wu, T. Kirk, E. Berger, J. Segal. 2009. "Smule = Sonic Media: An Intersection of the Mobile, Musical, and Social." *In Proceedings of the International Computer Music Conference*. Montreal, 2009.

Teaching Experience

Fall 2007 – present, Stanford University

Assistant Professor, CCRMA | Music Department

Composing, Coding, and Performance for Laptop Orchestra (2008, 2009)

Music, Computing, and Design (2008)

Compositional Algorithms and Psychoacoustics (2008, 2009)

Fundamentals of Computer-Generated Sound (2008, with Chris Chafe 2007)

Soundwire Ensemble (with Chris Chafe 2007)

Fall 2006, Princeton University

Instructor + Co-Director (with Perry Cook): *Princeton Laptop Orchestra*.

Graduate + Undergraduate Seminar: *Composing for Laptop Orchestra*

Designed core curriculum (lectures, projects, performances).

Delivered weekly lectures, rehearsals, and discussions on issues ranging from software design, composition, musical performance design, interface design and mapping, networking, instruction building, sound synthesis.

Co-directed major performances (*NYC Debut*, *PLOrktastic Chambers Music*, *Final Concert*), premiering 15+ all-new pieces for the laptop orchestra.

Fall 2006, Dartmouth College (commuted weekly between Dartmouth and Princeton)

Instructor, Graduate Seminar: *In the Service of Electro-Acoustic Music:*

Digital Signal Processing + Software Design/Implementation Techniques

Designed curriculum teaching DSP theory and applications together with software design and implementation techniques, topics, and "best practices".

Delivered weekly lectures and discussions on issues ranging from signal processing (theory and applications, Fourier analysis, filter analysis, classic synthesis techniques, physical modeling, speech modeling, etc.) and computer science (interactive system design, object-oriented principals, design patterns, real-time audio, data structures for sound synthesis, optimization, C++/Java)

Fall + Spring 2005, Princeton University

Teaching assistant: *PLOrk: Princeton Laptop Orchestra.*

(Perry Cook, Dan Trueman, Scott Smallwood, Ge Wang)
designed half of core curriculum based on Chuck programming language
delivered weekly class lectures on Chuck/Audicle and programming
helped to build PLOrk networking infrastructure in Max/Chuck
held extensive office hours every week; worked closely with students

2004, Stanford CCRMA Summer Workshop (Banff Centre, Canada).

Teaching Assistant: *Digital Signal Processing for Audio: Spectral and Physical Models.* (for Perry Cook and Xavier Serra)

2003, Princeton University. Teaching assistant: *Advanced Programming Techniques.*

(for Brian Kernighan, with Limin Jia)
mentored of 7 groups over 2 months in designing 3-tiered system

2002, Princeton University. Teaching assistant: *Human Computer Interaction.*

(for Perry Cook)

2000, Duke University. Teaching assistant: *Introduction to Computer Graphics.*

(for Pankaj Agarwal)
designed and held precepts and OpenGL samples
designed and implemented public scene file format and parser for student use

1999 – 2000, Duke University. Teaching assistant: *Advanced Object-oriented Programming* (for Owen Astrachan and Robert Duvall)

1997 – 1999, Duke University. Teaching assistant: *Data Structures II*

(for Owen Astrachan and Robert Duvall)

Workshops Presented

“Rapid Prototyping for Real-time Music Information Retrieval with Chuck”

2008 International Conference on Music Information Retrieval (ISMIR)

Ge Wang, Rebecca Fiebrink, and Perry Cook

“Chuck Programming + Laptop Orchestras”

Alberta College of Arts of Design, Calgary, Canada (invited)

Ge Wang and Rebecca Fiebrink

“Sound Design and Composing with TAPESTREA:

Weaving Your Own Musical Tapestries”

2007 International Computer Music Conference

Ananya Misra, Ge Wang, and Perry Cook

August 25, 2007

“Chuck + On-the-fly Programming”

2007 Electro-Music Festival

Ge Wang and Rebecca Fiebrink
June 3, 2007

“ChucK Programming Language”

2006 International Computer Music Conference
Ge Wang, Perry Cook, Ananya Misra, Spencer Salazar, Rebecca Fiebrink
November 5, 2006

“ChucK + On-the-fly Programming”

School of the Art Institute of Chicago (invited), part of one week residency.
April 2006

“Yeah ChucK It!”

2005 International Conference on New Interface for Musical Expression
Ge Wang, Ananya Misra, Perry Cook, Ajay Kapur, and Adam Tindale
May 24, 2005

“ChucK + Audicle Programming Language”

Transmediale 2005 Media Festival
February 6, 2005

“ChucK: New Audio Programming Language”

Share 2004, NYC
Ge Wang + Phil Davidson
November 17, 2005

Invited Talks

Topics: *ChucK Programming Language; On-the-fly Programming; Real-time Languages and Environments for Synthesis, Composition, and Performance; Laptop Orchestras; Mobile Music, Social Music, Sonic Media; Teaching Programming with Music, and Music via Technology; New Classrooms in Computer Science + Music; Designing Interfaces for Music; Creating New Expressive Social Mediums on Mobile Phones; The World is Your Stage: A Story of Smule.*

June 2009. Apple Worldwide Developer Conference, San Francisco.

June 2009. Frost and Sullivan Conference, San Francisco (keynote).

May 2009. Mobile Music Symposium, University of Minnesota.

April 2009. Louisiana State University.

April 2009. Harvard University Systems Seminar.

March 2009. iGames Summit 2009, San Francisco.

March 2009. Emerging Communications Conference (keynote).

March 2009. California College of the Arts.

November 2008. Stanford University Symbolic Systems Forum.

November 2008. International Symposium on Culture Technology, Seoul.
 April 2008. Alberta College of Art and Design. Calgary, Canada.
 (with Rebecca Fiebrink)
 March 2008. California Institute of the Arts. Los Angeles.
 March 2008. *Rencontres Musicales Pluridisciplinaires*; theme: “Digital Arts and Programming”. Lyon, France.
 January 2008. Duke University Visualization Seminar; ISIS Seminar.
 January 2008. Ex’pression College for Digital Arts, Insider’s Day.
 December 2007. Bay Area Music Technology Group, San Francisco.
 December 2007. Living the Knowledge Society workshop, Santa Clara University.
 November 2007. Stanford University HCI Seminar - People, Computer, and Design.
 September 2007. Bay Area Music Technology Group, San Francisco.
 June 2007. Electro-music 2007 Festival, Philadelphia. (with Rebecca Fiebrink)
 April 2006. Art Institute of Chicago (1-week seminar/workshop).
 October 2005. University of Beijing, China.
 October 2005. Central Conservatory of China / MusicAcoustica 2005.
 September 2005. University of Rome (La Sapienza), Rome, Italy.
 May 2005. University of Victoria, Department of Computer Science. BC, Canada.
 February 2005. Transmediale 2005 Festival. Berlin, Germany.

Selected Musical Works and Performances

- "On-the-fly Counterpoint"** (live coding) for laptops and projectors
<http://on-the-fly.cs.princeton.edu/>
 (with Perry Cook) 2003 Listening in the Sound Kitchen Festival, Princeton, NJ.
 (with Perry Cook) 2004 International Conference of New Interfaces for Musical Expression, Hamamatsu, Japan. – *juried* –
 (10-person TOPLAP jam) 2005 Transmediale Festival, Club Maria, Berlin, Germany
 (with Nick Collins) 2005 Off-ICMC, Barcelona, Spain.
 (solo) 2005 MusicAcoustic Festival, Central Conservatory of China, Beijing, China
 (with Perry Cook) 2006 SIGGRAPH Art Gallery – Electronically Mediated Performance. – *juried* –
- "Gigapop Ritual"** Montreal/Princeton Internet2/CA2Net concert, for Sitar and EDholak (Ajay Kapur, Montreal), DigitalDoo (Perry Cook, Montreal), Electronic Spoon / Networking (Ge Wang, Montreal), Graphics (Philip Davidson, Montreal), Tabla and EDholak (Manjul Bhargava, Princeton), Electric Violin and RBow (Dan Trueman, Princeton), and Bass (Tae Hong Park, Princeton). International Conference on New Interfaces for Musical Expression, Montreal. May 2003.
<http://gigapop.cs.princeton.edu/>
- "Non-Specific Gamelan Taiko Fusion"** for the Princeton Laptop Orchestra (PLOrk) and Stanford Laptop Orchestra (SLOrk). (with Perry Cook) This piece is an

experiment in human controlled, but machine synchronized percussion ensemble performance, for 15 laptops, each with 6 channel hemispherical speakers. Princeton University, January and April 2006.

<http://plork.cs.princeton.edu/listen/debut/>

“**CliX**” for the Princeton Laptop Orchestra (PLOrk) and Stanford Laptop Orchestra (SLOrk). Human operators type to make sounds, while their machines synthesize, synchronize, and spatialize the audio. Every key on the computer keyboard (upper/lower-case letters, numbers, symbols) is mapped to a distinct pitch (using the key's ASCII representation) and when pressed, emits a clicking sound that is synchronized in time to a common pulse. A (human) conductor coordinates frequency range, texture, movement, and timing. 2006.

<http://plork.cs.princeton.edu/listen/green/>

“**Chuck Chuck Rocket**” for the Princeton Laptop Orchestra (PLOrk). (with Scott Smallwood, special thanks to Ananya Misra) Human players perform via a networked game-board for virtual mouse-like critters, creating patterns at various scales via patterns and sound objects. 2006.

“**Loom (*Etude II pour un enfant seul*)**” for 8-channel tape using musical tapestry + sound scene re-composition, with Ananya Misra and Perry Cook.

– *juried* – International Computer Music Conference, 2006.

<http://taps.cs.princeton.edu/>

“**Crystalis**” for the Princeton Laptop Orchestra (PLOrk) and Stanford Laptop Orchestra (SLOrk). This is a sonic rumination of crystal caves in the clouds, where the only sounds are those of the wind and the resonances of the crystals. It uses two simple instruments called the *crystalis* and *wind-o-lin*. These instruments make use of the laptop keyboard (which controls pitch and resonance) and the trackpad (which the players “bow” in various patterns to generate sound). 2006.

<http://plork.cs.princeton.edu/listen/NYC/>

“**PLOrk Beat Science**” (with Rebecca Fiebrink). An Adventure for Flute and HyPLOrkussion! Performances include: National Academy of Science Museum Washington DC, Electro-music 2007 Festival in Philadelphia, Princeton 2007, New Interfaces for Music Expression 2009, Pittsburgh.

<http://plork.cs.princeton.edu/beatsscience/>

“**Joy of Chant**” for the Princeton Laptop Orchestra (PLOrk). (with Rebecca Fiebrink and Perry Cook). A scored and improvisatory work for laptop ensemble, using joystick- and keyboard-controlled real-time singing synthesis. 2007.

“**TBA**” for the Princeton Laptop Orchestra (PLOrk) and Stanford Laptop Orchestra (SLOrk). Orchestral Live Coding for 15 laptops using ChuckK! Premiered in Princeton. 2007.

Concerts Directed and Curated

SLOrk 2009 Spring Concert. June 2009. Director. “The Stanford Laptop Orchestra (SLOrk) celebrates the conclusion of a wonderful 2009 season with a full-scale laptop orchestra concert.” Stanford University.

SLOrktastic Chamber Music I + II. May 2009. Director. “The Stanford Laptop Orchestra (SLOrk) presents two evenings of all new works for laptop chamber music, by members of the SLOrk ensemble and seminar.” Stanford University.

Stanford Laptop Orchestra @ Distinctive Voices, Beckman Center. March 2009. Director. Presented by the Beckman Center and the National Academy of Science, the Stanford Laptop Orchestra presents a concert and discussion. Irvine, CA.

Stanford Laptop Orchestra @ MacWorld. January 2009. Director. “The Stanford Laptop Orchestra presents a selection of works for a wide audience at MacWorld 2009.” San Francisco, CA.

MoPhO @ ICMC. August 2008. Co-director – with Georg Essl and Henri Penttinen. “The Stanford Mobile Phone Orchestra (MoPhO) presents works for mobile smart phones at the International Computer Music Conference.” Belfast, Ireland.

SLOrktastic Chamber Music. May 2008. Director. “The Stanford Laptop Orchestra presents an evening of all new works for electronic chamber music, by members of the SLOrk ensemble and seminar. The public is cordially invited to join us in exploring intimate sonic and musical spaces with performances crafted for up to six laptop stations.” Stanford University.

Pacific Rim of Wire: An Online Concert with Chinain the Premiere of the Stanford Laptop Orchestra. April 2008. Co-curator and director – with Chris Chafe and Jindong Cai. “In this first-of-its-kind concert, musicians from Stanford University’s renowned Center for Computer Research in Music and Acoustics (CCRMA) connects with musicians 6000 miles away in Beijing to perform – in real-time via the internet – a program that celebrates music, technology, and international collaboration, and marks the stage premiere of the Stanford Laptop Orchestra.”

Sonic SLOrk Sculptures. April 2008. Director. “Stanford Laptop Orchestra presents an afternoon of music and sonic installation performances, among the statues and under the canopy of the New Guinea Sculpture Garden at Stanford University, in a first-ever outdoor laptop orchestra concert.”

Mobile Phone Orchestra Debut. January 2008. Director. “CCRMA’s Mobile Phone Orchestra presents an experimental concert featuring music performed on mobile electronic devices. Far beyond ring-tones, these interactive musical works take advantage of the unique technological capabilities of today’s hardware, turning computer keypads, touch-screens and built-in accelerometers into powerful and mobile musical control systems.”

Princeton Laptop Orchestra: Winter Concert. January 2007. Co-directed, with Perry Cook. “The Princeton Laptop Orchestra presents an evening of new music, composed and performed by members of the Fall 2006 PLOrk seminar and ensemble.” Princeton University.

PLOrk in New York: Ear to the Earth Festival. New York City, October 2006. Co-directed, with Perry Cook. “For the Ear to the Earth Festival, the Princeton Laptop Orchestra has prepared a special set of sounds and musical works that explore our environments – both real and imagined, human and natural. These pieces do not aim to convey a single idea or message, but simply to evoke and to immerse the listener in familiar as well as alternate sonic surroundings.”

Princeton Laptop Orchestra Debut. Princeton University, Fall 2005. Co-directed and instructed, with Dan Trueman, Perry Cook, and Scott Smallwood. “The debut concert of the Princeton Laptop Orchestra features works by instructors and students in inaugural PLOrk ensemble.”

Work Experience

Fall 2007 – present. Assistant Professor. Stanford University. Center for Computer Research in Music and Acoustics (CCRMA) | Department of Music (also Computer Science, by Courtesy). Full-time research and teaching.

Summer 2008 – present. Co-founder. Smule (SonicMule Inc.) Technology + creativity startup company developing interactive social/sonic media; a research platform to bring the visions of in computer music research to a wide population.

2001 – 2007. Graduate Student and Research Assistant. Princeton University. Department of Computer Science. Full-time research; teaching.

Feb – Aug 2001. Software Engineer. The Adrenaline Group. Software Development Team. Designed and implemented distributed architecture for associative client-side database caching in Java; constructed and taught company course in C++, application development, and graphics.

2000 Summer. Software Design Engineer. Microsoft Corporation. DirectX Group, SDK Team. Designed and implemented DirectX 8.0 multimedia samples, and shared sample components (binaries and source code shipped with SDK) using DirectMusic, DirectSound, and DirectInput.

1997 – 2000. Teaching Assistant. Duke University Computer Science Department. 10-30 hours per week. Guided and helped students enrolled in computer science courses in laboratory work and programming projects in Java/C++, simulations, and graphics.

1999 Fall. Lead Developer and Co-founder. BuyIQ.com (failed E-commerce start-up). Designed and implemented SQL Server database with ASP front-end for consumer research / shopping site, along with authoring/publishing tool and utilities for managing / maintaining web site and database.

1999 Summer. Software Engineer. Evans and Sutherland Corporation. Designed and implemented architecture for GL-Trace, an application for observing and tracing multithreaded OpenGL applications.

- 1998 Summer. Software Design Engineer. Microsoft Corporation. WindowsNT Development Group. Graphics Device Interface (GDI) Team. Implemented features for color management and test-bed application to flexibly test GDI+.
- 1998 Spring. Lead Developer (with George Stetten and Visnu Pitiyanuvath). 3D Java / C++ Game Engine. Designed and Implemented graphics / game engine in Java and in C++/OpenGL used in simulation course.
- 1997 Summer. Custom Programmer / Consultant. Data Systems International. Designed and implemented database software while working directly and extensively with client.

Academic and Departmental Service

Program Committee, International Computer Music Conference (ICMC); 2006, 2008
Program Committee, New Interfaces for Musical Expression (NIME); 2008
Reviewer, International Computer Music Conference (ICMC); 2004-2009
Reviewer, New Interfaces for Musical Expression (NIME); 2006-2009
Reviewer, Computer Music Journal; 2006-present
Reviewer, IEEE Multimedia; 2007-present
Member, Association for Computing Machinery
Member, International Computer Music Association
Member, TOPLAP (live coding organization)
Member, Computer Science Graduate Council (Princeton)
Design and maintenance of Princeton Sound Lab site

Additional Information

Spoken languages: English, Chinese (Mandarin)
Citizenship: U.S.
Born: November 1977 in Beijing, China

References

(available upon request.)

References

Perry R. Cook

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Dan Trueman

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dan@music.princeton.edu

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bwk@cs.princeton.edu

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Electro-Acoustic Music Program / CCRMA
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(Additional references available upon request.)