

Gil Weinberg
Professor
School of Music, College of Design
Georgia Institute of Technology

Curriculum Vitae
Jan 31, 2024

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I. Earned Degrees

- P. H. D. 2003 Massachusetts Institute of Technology, Cambridge, MA
Major: Media Arts and Sciences
Dissertation: Interconnected Musical Networks
- M. S. 1999 Massachusetts Institute of Technology, Cambridge, MA
Major: Media Arts and Sciences
Thesis: Expressive Digital Musical Instruments for Children
- B. A. 1994 Tel Aviv University, Tel Aviv, Israel
The Interdisciplinary Program for Fostering Excellence
Program Major: Musicology, Minor: Computer Science
Magna Cum Laude

II. Employment History

<u>Title</u>	<u>Employer</u>	<u>Dates of Employment</u>
Founding Director, Center for Music Tech	Georgia Institute of Technology	2009 – present
Professor	Georgia Institute of Technology	2013 – present
Founding Director of MT Graduate Studies	Georgia Institute of Technology	2006– 2021
Associate Professor	Georgia Institute of Technology	2008 – 2013
Assistant Professor	Georgia Institute of Technology	2003 – 2008

III. Honors and Awards

1. Keynote Speaker, UltraCon 2024: The Future of Ultrasound (2024)
2. Falling Walls Science Breakthrough of the Year Award for FOREST- an Interactive Robotic Installation (2022)
3. First Robot to Participate in a Rap Battle, World Record, Guinness Book of World Records (2021)
4. Keynote Speaker, International Conference on Movement and Computing, Boston, MA (2020)
5. Best Paper Award for “Shimon the Robot Rapper,” International Conference for Computational Creativity, (2020)
6. Keynote Address, International Conference on Human-Robot Interaction, Seoul, Korea (2019)
7. Most Innovative and Creative Concert Experience of the Year Award, for Shimon performing with “We Robot” Denmark Music Prize (“Danish Grammy”) (2019)

8. Most Drumstick Hits in a Minute with a Prosthetic, World Record, Guinness Book of World Records (2018)
9. Best Paper Award for “Unit Selection Methodology for Music Generation,” International Conference for Computational Creativity (2017)
10. Best Medical Technology of the Year for “Skywalker Prosthetics Arm,” Medgadget Magazine (2017)
11. Keynote Address, Geek Picnic Festival, St. Petersburg, Russia (2015)
12. Speaker, TED NYC (2014)
13. Fellow, American Council of Education Fellow (2013-2014)
14. Commencement Speaker, Kennesaw State University (2013)
15. Speaker, TEDx Peachtree (2012)
16. Finalist, for “Shimi– a Personal Robotic Companion,” Tech Crunch Disrupt Startup Battlefield Competition, (2012)
17. Webby Award, for “My Beat Maker,” Cannes Lions (2012)
18. Edison Award, for “Shimon the Robot,” Edison Award Organization (2012)
19. Invited Speaker, World Economic Forum, Davos (2011)
20. Art Award, The Georgia Tech Research Cooperation (2011)
21. Golden Tower Award, Faculty Communicator of the Year, Georgia Tech (2011)
22. Speaker, New York Times Schools for Tomorrow Conference (2011)
23. Keynote Speaker, The International Conference of Machine Learning (2010)
24. Finalist Best Application Award, for “Mashup Artist,” MIDEM Festival (2010)
25. Best Cognitive Paper Award, IEEE International Conference on Robotics and Automation Conference (2010)
26. Best Music Video Award, ACM Computer Human Interaction Conference (2010)
27. Finalist, Best Musical Application Award for “ZOOZbeat”, Billboard Magazine (2009)
28. Best Gadget Award, for “ZOOZbeat”, Kinnernet USA (2009)
29. Best Robotic Creativity Award / Keynote Speaker, the Association of the Advancement in Artificial Intelligence (2008)

IV. Research, Scholarship, and Creative Activities

A. Published Books

1. Weinberg, G., Bretan, M., Hoffman, G. Driscoll, S. “Robotic Musicianship: Embodied Artificial Creativity and Mechatronic Musical Expression,” Springer Nature, 2020

B. Refereed Publications

B1. Published Journal Articles and Book Chapters

1. Savery, R., Rogel, A. and Weinberg G., “How Happy Should I Be? Leveraging Neuroticism and Extraversion for Music-Driven Emotional Interaction in Robotics” in Savery, R. (ed.) Sound and Robotics: Speech, Non-verbal audio and Robotic Musicianship Richard Savery; Publisher - CRC Press 2023
2. Savery, R., Rogel, A. and Weinberg G., “Augmenting a Group of Task-Driven Robotic Arms with Emotional Musical Prosody” in Savery, R. (ed.) Sound and Robotics: Speech, Non-verbal audio and Robotic Musicianship Richard Savery; Publisher - CRC Press, 2023
3. Rogel, A., Savery, R. and Weinberg G., “Robotic Dancing, Emotional Gestures and Prosody: A Framework for Gestures of Three Robotic Platforms” in Savery, R. (ed.) Sound and Robotics: Speech, Non-verbal audio and Robotic Musicianship Richard Savery; Publisher - CRC Press, 2023
4. Yang, N, Rogel, A, Weinberg, G. “Design of an Expressive Robotic Guitarist,” IEEE Robotics and Automation Letters, 2023
5. Savery, R. Weinberg, G. (2022) “Robotics: Fast and Curious: A CNN for Ethical Deep Learning Musical Generation, in Artificial Intelligence and Music Ecosystem, ed. By Martin Clancy, Taylor and Francis Group, 2022
6. Savery, R., Weinberg, G. “Robots and Emotion: a Survey of Trends, Classifications, and Forms of Interaction,” Advanced Robotics, Volume 35, 2021
7. Savery, R., Zahray, L., Weinberg, G. “Before, Between, and After: Enriching Robot Communication Surrounding Collaborative Creative Activities,” Frontiers in Robotics and AI: Creativity and Robotics, 2021
8. Savery, R., Zahray, L., Weinberg, Gil “Emotional Musical Prosody for the Enhancement of Trust: Audio Design for Robotic Arm Communication,” Paladyn Journal of Behavioral Robotics, 2021
9. Savery, R., Zahray, L., Weinberg, G. “Shimon Sings - Robotic Musicianship Finds its Voice Handbook of Artificial Intelligence and Music,” Springer, 2020
10. Savery, R., Zahray, L., Weinberg, G. “A ConvNet for Ethical Robotic Musical Generation and Interaction Artificial Intelligence and Creative Music Practice,” Routledge, 2020

11. W Lv, RM Winters, F DeAngelis, G Weinberg, A Henry, Understanding Divergent Thermal Conductivity in Single Polythiophene Chains Using Green–Kubo Modal Analysis and Sonification, *The Journal of Physical Chemistry A* 121 (30), 5586-5596, 2017
12. Bretan, M., Weinberg, G. “A Survey of Robotic Musicianship: Motivations, Challenges, and Opportunities,” *Communications of the ACM*,” Vol. 59.5 pp.100-109, 2016
13. Gopinath, D., and Weinberg, G. “A generative physical model approach for enhancing the stroke palette for robotic drummers,” *Robotics and Autonomous Systems*, Vol. 86, pp. 207–215, 2016
14. Bretan, M., Hoffman, G., Weinberg, G. “Emotionally Expressive Dynamic Physical Behaviors in Robots,” *International Journal of Human-Computer Studies*. Vol. 78 pp. 1-16, 2015
15. Cicconet, M., Bretan, M., and Weinberg, G. “Anticipation Based on Visual Cues for Human-Robot Percussion Ensemble,” in *IEEE Robotics and Automation Magazine*, Vol. 20:4. pp. 105-110, 2013
16. Nikolaidis, R., Weinberg G. “Generative Musical Tension Modeling and its Application in Dynamic Sonification,” *Computer Music Journal*, Vol. 36:1. pp. 55-64, 2012
17. Hoffman, G., Weinberg G. “Interactive Improvisation with a Robotic Marimba Player,” *Journal of Autonomous Robots*, PP Springer Press, Vol. 31(2-3) pp. 133-153, 2011
18. Weinberg G. “The Beatbug – Evolution of a Musical Controller,” *Digital Creativity*, Taylor and Francis Press, Vol. 19:1, pp. 3-18, 2008
19. Weinberg G., Godfrey M., Rea, A., Rhodes, J. “A Real-Time Genetic Algorithm In Human-Robot Musical Improvisation,” *Lecture Notes in Computer Science*, Springer Press, Vol. 4969, pp. 351-359, 2007
20. Weinberg G., Driscoll, S. “Towards Robotic Musicianship,” *Computer Music Journal*, MIT Press. Vol. 30:4, pp. 28-45, 2006
21. Weinberg G., Thatcher T. “Interactive Sonification: Aesthetics, Functionality and Performance,” *Leonardo Music Journal*, MIT Press: Vol.16, pp. 9-12, 2006
22. Weinberg G. “Local Performance Networks – Musical Interdependency through Gestures and Controllers,” *Organized Sound*, Cambridge University Press, 10:3, pp. 255-267, 2005
23. Weinberg G. “Voice Networks – Exploring the Human Voice as a Creative Medium for Musical Collaboration,” *Leonardo Music Journal*, MIT Press, 15, pp. 23-26, 2005
24. Weinberg G. “Interconnected Musical Networks – Towards a Theoretical Framework,” *Computer Music Journal*, MIT Press, 29:2, pp. 23-39, 2005
25. Weinberg G. “Playpens, Fireflies, and Squeezables – New Musical Instruments for Bridging the Thoughtful and the Joyful,” *Leonardo Music Journal*, MIT Press, 12, pp. 43-51, 2003
26. Weinberg G., and Gan S “The Squeezables: Toward an Expressive and Interdependent Multi-player Musical Instrument,” *Computer Music Journal*, MIT Press, 25:2, pp. 37-45, 2001
27. Weinberg G. “The Musical Playpen: An Immersive Digital Musical Instrument,” *Personal Technologies*, Springer-Verlag Press, 3:3, pp. 132-136, 1999

B2. Conference Presentations with Proceedings (Refereed)

1. Sankaranarayanan R., Hugar, N. Lei, Q., Goel H., Ottolin, T., and Weinberg G. “Mixboard – A Co-Creative Mashup Application for Novices,” the International Conference for New Interfaces for Music Expression (NIME) Mexico City, Mexico, 2023
2. Ottolin, T., Sankaranarayanan R., Hugar, N. Lei, Q. and Weinberg G. “Balancing Musical Co-Creativity: The Case Study of Mixboard, a Mashup Application for Novices” The 16 International Symposium on Computer Music Multidisciplinary Research, Tokyo, Japan, 2023
3. Rogel, Amit, et al. "RoboGroove: Creating Fluid Motion for Dancing Robotic Arms." Proceedings of the 8th International Conference on Movement and Computing, Chicago, Illinois, 2022
4. Rogel, Amit. "Music and Movement Based Dancing for a Non Anthropomorphic Robot," 17th ACM/IEEE International Conference on Human-Robot Interaction (HRI). IEEE, Sapporo, Japan, 2022
5. Savery, R, Rogel, A, and Weinberg, G. “Emotion Musical Prosody for Robotic Groups and Entitativity,” 30th IEEE International Conference on Robot & Human Interactive Communication, Vancouver, BC, Canada, 2021
6. Savery, R., Weinberg, G., “Machine Learning Driven Musical Improvisation for Mechanomorphic Human-Robot Interaction,” ACM/IEEE International Conference on Human-Robot Interaction, virtual, 2021
7. Farris, Nic., Model, B., Savery, R., Weinberg, G, “Musical Prosody-Driven Emotion Classification: Interpreting Vocalists Portrayal of Emotions Through Machine Learning,” 18th Sound and Music Computing Conference, virtual, 2021
8. Ram, N., Gummadi, T., Bhethanabotla, R., Savery, R., Weinberg, G. “Say What? Collaborative Pop Lyric Generation Using Multitask Transfer Learning,” Proceedings of the 9th International Conference on Human-Agent Interaction, virtual, 2021
9. Sankaranarayanan, R., & Weinberg, G.; Design of Hathaani-A Robotic Violinist for Carnatic Music; New Interfaces for Musical Expression (NIME), virtual, 2021
10. Yang, N., Sha, R., Sankaranarayanan, R., Sun, Q. and Weinberg, G., Drumming Arm: an Upper-limb Prosthetic System to Restore Grip Control for a Transradial Amputee Drummer; IEEE International Conference on Robotics and Automation (ICRA), virtual, 2021
11. Savery, R., Zahray, L., Weinberg, G. “Shimon the Rapper: A Real-Time System for Human-Robot Interactive Rap Battles,” International Conference on Computational Creativity, virtual, 2020
12. Savery, R., Zahray, L., Weinberg, G., “Emotional Musical Prosody for the Enhancement of Trust in Robotic Arm Communication Trust, Acceptance and Social Cues in Human-Robot Interaction,” International Conference on Human Robot Interaction (Ro-MAN), virtual, 2020
13. Savery, R., Gil Weinberg, “A Survey of Robots and Emotion: Broad Trends and Models of Emotional Interaction,” 29th IEEE International Conference on Robot Human Interactive Communication, virtual, 2020

14. Zahray, L., Savery, R., Syrkett, L., and Weinberg, G., "Robot Gesture Sonification to Enhance Awareness of Robot Status and Enjoyment of Interaction," 29th IEEE International Conference on Robot & Human Interactive Communication, virtual, 2020
15. Savery, R., Zahray, L., Weinberg G., "Emotional Musical Prosody: Validated Vocal Dataset for Human Robot Interaction," Joint Conference on AI Music Creativity, virtual, 2020
16. Yang, N., Savery, R., Sankaranarayanan, R., Zahray, L., Weinberg, G. "Mechatronics-Driven Musical Expressivity for Robotic Percussionists," New Interfaces for Musical Expression, virtual, 2020
17. Savery, R., Weinberg, G. "Long-Term Interaction and Persistence of Engagement for Musical Interaction using a Genetic Algorithm," Proceedings of the 8th International Conference on Human-Agent Interaction (HAI '20), virtual, 2020
18. Bimbraw K., Fox E., Weinberg G., Hammond F., Towards Sonomyography-Based Real-Time Control of Powered Prosthesis Grasp Synergies. The IEEE Engineering in Medicine and Biology Society, virtual, 2020
19. Savery, R., Rose, R., Weinberg, G., "Establishing Human-Robot Trust through Music-Driven Robotic Emotion Prosody and Gesture," 28th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Dehli, India, 2019
20. Savery, R., Rose, R., Weinberg, G. "Finding Shimi's Voice: Fostering Human-Robot Communication With Music and a NVIDIA Jetson TX2 17th," Linux Audio Conference (LAC-19), Stanford University, USA, 2019
21. Savery, R., Weinberg, G., "Shimon the Robot Film Composer and DeepScore," Computer Simulation of Musical Creativity, Dublin, Ireland, 2018
22. Hantrakul, L., Kondak, Z., Weinberg, G. "Practice Makes Perfect: Towards Learned Path Planning for Robotic Musicians using Deep Reinforcement Learning." MOCO '18 Proceedings of the 5th International Conference on Movement and Computing, Genoa, Italy, 2018
23. Rosa, L., Bimbraw, K., Hammond, F., Weinberg, G. "Comparison and Integration of Sonomyography and Electromyography" BMES 2018 Annual Meeting, Atlanta Georgia, 2018
24. Bretan, M., Weinberg, G. and Heck, L. "A Unit Selection Methodology for Music Generation Using Deep Neural Networks," (Submitted to AAAI, currently accessible at Arxiv (cs.SD/1612.03789), 2018
25. Bretan, M., Gopintah, D., Mullins, P., and Weinberg, G. "A Robotic Prosthesis for an Amputee Drummer," (Submitted to ACM Creativity and Cognition Conference, currently accessible at Arxiv - co.RO/1612.04391), 2017
26. Bretan, M., and Weinberg, G. "Integrating the cognitive with the physical: Musical path planning for an improvising robot." AAAI, 2017
27. Khodambashi R., Weinberg, G., Singhose, W., Rishmawi S., Murali V., Kim E. (2016) "User Oriented Assessment of Vibration Suppression by Command Shaping in a Wearable Robotic Arm," IEEE-RAS International Conference on Humanoid Robots, Cancun, Mexico, 2016

28. Winters, M., Weinberg Gil “Sonification, Popularization, and Music,“ International Conference for Auditory Displayers (ICAD 2015) Graz, Austria, 2015
29. Clark, J., Bretan, M., Weinberg, G. “Query By Dance,” Proceedings of the International Conference on Multimedia and Human-Computer Interaction (MHCI'14), Prague, Czech Republic, 2014
30. Bretan, M., Weinberg, G. “Chronicles of a Robotic Musical Companion,” Proceedings of the New Interfaces for Musical Expression Conference (NIME 2014), London, UK, 2014
31. Albin, A., Weinberg, G., Egerstedt, M. “Musical Abstractions in Distributed Multi-Robot Systems,” IROS, IEEE/Robotics Society of Japan International Conference on Intelligent Robots and Systems, Vilamoura, Portugal, 2013
32. Bretan, M., Cicconet, M., Nikolaidis, R., and Weinberg, G. “Developing and Composing for a Robotic Musician Using Different Modes of Interaction,” the International 2012 International Computer Music Conference (ICMC 12), Ljubljana, Slovenia, 2012
33. Sun, S., Malikarjuna, T., Weinberg, G. “Effect of Visual Cues in Synchronization of Rhythmic Patterns,” the International Conference of Music Perception and Cognition (ICMPC 12), Thessaloniki, Greece, 2012
34. Bretan, M., Weinberg, G., and Freeman, J. “Sonification for the Art Installation Drawn Together,” extended abstract in the Proceedings of the 2012 International Conference on Auditory Display (ICAD 12), Atlanta, GA, 2012
35. Cicconet, M., Bretan, M., and Weinberg, G. “Visual cues-based anticipation for percussionist-robot interaction,” Proceedings of the 7th ACM/IEEE International Conference on Human-Robot Interaction, (HRI 12), Boston, Massachusetts, 2012
36. Weinberg, G. “Gesture-based Human-Robot Jazz Improvisation,” extended abstract in the Proceedings of the International Conference of Machine Learning (ICML 11), Seattle, USA, 2011
37. Albin, A., Senturk, S. Van Troyer, A., Blosser, B., Jan. O, Weinberg, G. “Beatscape, a mixed virtual-physical environment for musical ensembles,” Proceedings of the International Conference on New Instruments for Music Expression (NIME 11), Oslo, Finland, 2011
38. Weinberg, G., Nikolaidis, R., and Mallikurjuna, T. “A Survey of Recent Interactive Compositions for Shimon – The Perceptual and Improvisational Robotic Marimba Player,” Proceedings of the International Conference on Intelligent Robots and Systems (IROS 2010), Taipei, Taiwan, 2010
39. Nikolaidis, R., and Weinberg G. “Playing with the Masters: A Model for Interaction between ___ Robots and Music Novices”, Proceedings of the 19th International Symposium on Robotics in Music and Art (RO-MAN 10), Viarggio, Italy, 2010
40. Hoffman, G., and Weinberg G. “Synchronization in Human-Robot Musicianship,” Proceedings of the 19th International Symposium on Robot and Human Interactive Communication (RO-MAN 10), Viarggio, Italy, 2010
41. Hoffman, G. and Weinberg, G. “Gesture-based Human-Robot Jazz Improvisation,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA 10), Anchorage, AK. (Best Cognitive Paper Award), 2010

42. Huang, K., Starner, T., Do, E., Weinberg, G., Kohlsdorf, D, Ahlrichs, C. and Leibrandt, R. "Mobile Music Touch: Mobile Tactile Stimulation For Passive Learning," Proceedings of International ACM Computer Human Interaction Conference (CHI 10), Atlanta, GA, 2010
43. Weinberg, G., Godfrey, M., Beck, A. "ZOOZbeat – Mobile Music Recreation," Extended Abstracts Proceedings of International ACM Computer Human Interaction Conference (CHI 10), Atlanta, GA, 2010
44. Hoffman, G., Weinberg, G. "Shimon: An Interactive Improvisational Robotic Marimba Player," Extended Abstracts Proceedings of International ACM Computer Human Interaction Conference (CHI 10), Atlanta, GA, 2010
45. Weinberg, G., Blosser B., Mallikarjuna, T., Ramen. "Human-Robot Interactive Music in the Context of a Live Jam Session," Proceedings of International Conference on New Instruments for Music Expression (NIME 09), Pittsburgh, PA, 2009
46. Weinberg, G., Beck, A., Godfrey M. "ZooZBeat: a Gesture-based Mobile Music Studio" Proceedings of International Conference on New Instruments for Music Expression (NIME 09), Pittsburgh, PA, 2009
47. Weinberg, G., Blosser B. "A Leader-Follower Turn-taking Model Incorporating Beat Detection in Musical Human-Robot Interaction" Proceedings of the ACM/IEEE International Conference on Human Robot Interaction, (HRI 2009) San Diego, CA, 2009
48. Weinberg, G., Mallikarjuna, T., Ramen "Interactive Jamming with Shimon: A Social Robotic Musician," Proceedings of the ACM/IEEE International Conference on Human Robot Interaction, (HRI 2009) San Diego, CA, 2009
49. Weinberg, G. "Bluetaps – Transforming Cell Phones into Expressive and Gestural Musical Instruments," Proceedings of International Conference on Intelligent Technologies for Interactive Entertainment (INTERTAIN 08), Cancun, Mexico, 2008
50. Weinberg, G., Godfrey, M., Rae, A., and Rhoads, J. "Real Time Genetic Algorithm In Human-Robot Musical Improvisation," Proceedings of International Computer Music Conference (ICMC 2007) Copenhagen, Denmark, pp. 192-195, 2007
51. Weinberg, G. "The Design of a Perceptual and Improvisational Robotic Marimba Player," Proceedings of IEEE International Workshop on Robot and Human Interactive Communication (RO-MAN 2007), Jeju, Korea, pp. 132-137, 2007
52. Weinberg, G. "Introducing Pitch, Melody and Harmony into Robotic Musicianship," Proceedings of the International Conference on New Interfaces for Musical Expression (NIME 2007), New York City, NY, pp. 228-233, 2007
53. Weinberg G., Driscoll, S. "The Interactive Robotic Percussionist: New Developments In Form, Mechanics, Perception and Interaction Design," Proceedings of the ACM/IEEE International Conference on Human-robot interaction (HRI 2007), Arlington, VA, pp. 97-104, 2007
54. Weinberg G., Driscoll S. Thatcher T. "Jam'aa - A Middle Eastern Percussion Ensemble for Human and Robotic Players," Proceedings of International Computer Music Conference (ICMC 2006), New Orleans LA, pp. 464-467, 2006

55. Weinberg G., Freeman, J., Chordia, P., Clark, F., Moore, C., Driscoll S. Thatcher T. "Music Technology Group at Georgia Tech – Studio Report," in the Proceedings of International Computer Music Conference (ICMC 2006), New Orleans, LA, pp. 413- 416, 2006
56. Thatcher T., Jimison D., Goetzinger J., Freeman J., Weinberg G. "Mobile Music Demonstration: Sequencer404," Proceedings of International Computer Music Conference (ICMC 2006), New Orleans, LA, p. 544, 2006
57. Weinberg G., Thatcher, T. "Interactive Sonification of Neural Activity," Proceedings of the International Conference on New Instruments for Musical Expression (NIME 2006), Paris, France, pp. 246-249, 2006
58. Weinberg G., Driscoll S. "Robot-Human Interaction with an Anthropomorphic Percussionist," Proceedings of International ACM Computer Human Interaction Conference (CHI 2006), Montréal, Canada, pp. 1229-1232, 2006
59. Weinberg G., Driscoll S., Parry M. "Haile – An Interactive Robotic Percussionist," Proceedings of International Computer Music Conference (ICMC 2005), Barcelona, Spain, pp. 622-625, 2005
60. Weinberg G., Driscoll S. (2005). "iltur – Connecting Novices and Experts Through Collaborative Improvisation," Proceedings of the International Conference on New Interfaces for Musical Expression (NIME 2005), Vancouver, Canada, pp. 17-22, 2005
61. Weinberg G., Driscoll S., Parry M. "Musical Interactions with a Perceptual Robotic Percussionist," Proceedings of IEEE International Workshop on Robot and Human Interactive Communication (RO-MAN 2005), Nashville, TN, pp. 456-461. (Best Paper Award), 2005
62. Weinberg G., Clark F. "Georgia Tech Music Department – Studio Report," Proceedings of the International Computer Music Conference (ICMC 2004), Miami, FL, pp. 119-122, 2004
63. Weinberg G. "Voice Networks – Exploring the Human Voice as a Creative Medium for Musical Collaboration," Proceedings of the International Computer Music Conference (ICMC 2004), Miami, FL, pp. 623-626, 2004
64. Weinberg G. "The Aesthetics, History, and Future Challenges of Interconnected Music Networks," Proceedings of the International Computer Music Conference (ICMC 2002), Göteborg, Sweden, pp. 349-356, 2002
65. Weinberg G., Aimi R., and Jennings, K. "The Beatbug Network – A Rhythmic System for Interdependent Group Collaboration," Proceedings of the International Conference on New Instruments for Musical Expression (NIME 2002), Dublin, Ireland, pp. 107-111, 2002
66. Weinberg G., Lackner T., and Jay J. "The Musical Fireflies – Learning About Mathematical Patterns in Music Through Expression and Play," Proceedings of XII Colloquium on Musical Informatics (CMI 2000), A'quila, Italy, pp. 146-149, 2000
67. Weinberg G., Orth M., and Russo P. "The Embroidered Musical Ball: A Squeezable Instrument for Expressive Performance," Proceedings of the International ACM Computer Human Interaction Conference (CHI 2000), The Hague, Netherlands, pp. 283 – 284, 2000
68. Weinberg G., Fletcher R., and Gan S. "The BabySense Environment – Enriching and Monitoring Infants' Experiences and Communication," Proceedings of the International ACM Computer Human Interaction Conference (CHI 1998), Los Angeles, CA, pp. 325-326, 1998

C. Creative Activity

Compositions and Performances

Medusai – A Performance with a Robotic Musical Sculpture

1. Trilith Studio, Lafayette GA, 12/9/2023

FOREST – A Robotic Dance Performance

1. Georgia Tech, Caddell Building, Atlanta, GA, 12/11/21
2. Bailey Art Center, Kennesaw State University, Kennesaw, GA, 7/26/21

Shimon Sings

1. Coda Building, Georgia Tech, GA, Atlanta, as part of “Avant South” Festival, 9/28/23
2. Megaron Concert Hall, Athens, Greece, with Dimitry Vaskilakis, 11/7/22
3. Terminal West, Atlanta, GA for Disney’s “The World According the Jeff Goldblum”, 3/16/21
4. Fox Theater, Egyptian Ballroom, Atlanta GA, 2/20/20

Shimon Plays featuring the Drumming Prosthetic Arm

1. Kennesaw State University, Kennesaw, as part of FOREST, GA, 7/26/21
2. Georgia Tech, Atlanta, GA, for “Age of AI hosted by Robert Downey Jr.,” 3/23/19
3. Tivoli Art Center, Utrecht, The Netherlands, 9/25/18
4. The United Nations (video presentation), NYC, NY 4/30/18
5. Atlanta Science Festival, Atlanta, GA, 3/9/18
6. Aspen Idea Fest, Aspen, CO, 6/28/17
7. Purdue Convocations, West Lafayette, IN 2/18/17
8. Shanghai International Art Festival, Shanghai, China, 10/28/16
9. Audi Beyond Summit, Berlin, Germany, 6/24/16
10. Moogfest, Durham, NC 5/21/16
11. Vodafone Digital Culture Summit, Istanbul, Turkey, 3/14/16
12. Robotronica Festival, Brisbane, Australia, 8/23/15
13. Kennedy Art Center, Washington DC, 7/22/15

Shimon Plays

1. Aarhus Jazz Orchestra, Aarhus, Denmark, 9/29/19
2. Opening of the Coda Building, Atlanta, GA, 5/23/19
3. CES, as part of the Keynote address, Las Vegas, NV, 1/5/17
4. MIT Media Lab, Cambridge, MA, 7/24/17
5. Future of Story Telling Summit, NYC, NY, 10/5/16
6. The TODAY Show, NBC, NYC, NY, 5/17/15
7. Ferst Center for the Arts, Atlanta, GA, (with Jade Simmons) 2/18/12
8. Google I/O, San Francisco, CA, 5/10/11
9. Sonic Generator Concert, Woodruff Art Center, Atlanta, GA, 3/16/11
10. Pulse Art and Technology Festival, Telfair Museum, Savannah, GA, 1/21/11
11. USA Science & Engineering Festival, Washington D.C., 10/ 23–24/10
12. MIT Media Lab 25-year Celebration, Boston, MA., 10/16/10
13. Bumbershoot Festival, Seattle, WA., 9/4–6/10
14. DLD Conference, Munich, Germany, 1/24/10
15. SIGGRAPH Asia, Yokohoma, Japan, 12/17/09
16. Eyedrum, Atlanta, GA, 4/22/09

Drumming Prosthetic Arm

1. Kennedy Art Center, Washington DC, part of “Artful Innovation: Inclusive Design and Technology” exhibition, 7/26/17
2. Ableton Loop Festival, Berlin, Germany, 11/6/16
3. El Hormiguero, prime time live Spanish TV show, Madrid, Spain, 5/9/16
4. Metz Music Festival, Metz, France, 5/11/15
5. Geek Picnic, Tech Festival St. Peterburg, Russia, 8/10/14
6. Bailey Performance Center, Robotic Arm Concert, Kennesaw, GA, 3/22/14.

Shimi – a Musical Robotic Companion

1. Fesrt Center for the Arts, Atlanta, GA (with the Ethel Quartet), 3/20/13
2. Tech Crunch Disrupt, Marconi Center, San Francisco, CA, September 12/10/12
3. Google IO, Marconi Center, San Francisco, CA, 28/6/12.

Haile – The Robotic Drummer

1. Robots at Play Festival, Odense, Denmark, 7/7/07
2. SIGGRAPH, Boston, MA, 7/30/06
3. Hamaabada, Jerusalem, Israel, 3/25/06
4. Pompidou Centre, Paris, France (as part of NIME conference), 9/22/05
5. Universitat Pompeu Fabra, Barcelona, (as part of ICMC conference) Spain, 9/7/05

Nerve for Beatbugs (Part of Tod Machover’s Toy Symphony)

1. BBC Scottish Symphony under Gerhard Markson, Glasgow, Scotland, 6/2/02
2. National Symphony Orchestra of Ireland under Gerhard Markson, National Concert Hall, Dublin, Ireland, 4/9/02
3. Deutsches Symphonie-Orchester conducted by Kent Nagano, Berlin, Germany, 02/24/02

Exhibitions

1. “Haile – a Robotic Drummer,” Science Museum, London, England, October, 2023 – May, 2024
2. “Haile – a Robotic Drummer,” Science and Industry Museum, Manchester England, October, 2022 – May, 2023
3. “Robots Love Music,” Museum Speelklok, Utrecht, The Netherlands, September – December, 2018
4. “ADA Technology Exhibition,” for the Prosthetic Drumming Arm, Kennedy Art Center, Washington DC, May-July, 2017
5. “Total Recall Exhibition,” for Shimi – The Musical Robotic Companion, Ars Electronica, Linz Austria, September, 2013
6. “Drawn Together,” An interactive multimedia installation with the Open Ended Group, Stubbins Gallery (exhibition), Georgia Tech, Atlanta, Georgia, February-March, 2012
7. “National Design Triennial: Inside Design Now,” Cooper Hewitt National Design Museum, New York, NY, April 2003 – January, 2004

Albums

1. “Shimon Sing,” by “Shimon the Robot,” Spotify, Apple Music and other streaming platforms, release date – March 2020
2. “FOREST” by Shimon the Robot,” Spotify, Apple Music and other streaming platforms, release date – November 2021

Software

1. “Mixboard,” an iOS and Web application for machine learning driven automatic mashup of Pop Songs, 2022-2023
2. “Piano Therapy,” an iOS piano practicing application for finger rehabilitation for stroke survivors, 2022-2023
3. “Piano Transcript,” A machine Learning based application for automatic transcription of pop songs, funded by AKG, 2021
4. “Concert Stich” – an interactive web app for selecting camera views of musical concerts based on User Generated Content - <https://concertstitch.com/>, 2019
5. “The Tunz” – A visual music mobile game, developed by Zooz Mobile, a spinoff company I started based on technology developed from Georgia Tech Center for Music Technology, 2014
6. “My Beat Maker” – Official London Olympics Music App. Winner of the Webby Award, Cannes Lions, developed by Zooz Mobile, a spinoff company I started based on technology developed from Georgia Tech Center for Music Technology, 2012
7. “ZOOZbeat” – a music making application. Over 2.5 million downloads from the Apple App Store, developed by Zooz Mobile, a spinoff company I started based on technology developed from Georgia Tech Center for Music Technology, 2008

D. Presentations

1. “Generative Music,” Avant South Conference, Fox Theater, Atlanta, GA, October 29, 2023
2. “Bridging the Gap Between Man and Machine,” SXSW, Austin Texas, March 17, 2022
3. Keynote Address, Intersystem Global Summit, San Antonio, TX, 2019
4. Keynote Address, Naspers Global Summit, New Delhi, India, 2018
5. “Computer Music,” University of California San Diego, Music Department, April, 27, 2018
6. “Robotic Creativity,” Purdue Convocations, West Lafayette, IN, February 17, 2017
7. “Machine Learning for Robotic Musicianship,” Ableton Loop Summit, Berlin, Germany, November 4, 2016
8. “Robotic Musicianship,” Shanghai International Art Festival, Shanghai, China, October 28, 2016

9. "Beyond Human – Creativity and the Machine," Murmuration Festival, St. Louis, September 4, 2016. (Keynote Address)
10. "Brain-Machine Interfaces for Robotic Musicianship," Your Brain on Art Summit, Cancun Mexico, July 25, 2016 (Keynote Address)
11. "Artificial Intelligence in Music," Audi Beyond Summit, Berlin, Germany, June, 24, 2016
12. "Shimon," Moogfest, Durham NC, May 21, 2016
13. "Robotic Musicianship," Robotronica, Brisbane Australia, 8/23/15 (Keynote Address)
14. "On Robotic Creativity," McGill University, CIRMMT General Assembly, Montreal, QC, Canada, May 28, 2015 (Keynote Address)
15. "Can Robots be Creative?," Creative Mornings, Callanwolde Center, Atlanta, GA, May 22, 2015
16. "Robotic Creativity," TED Youth, NYC, NY, November 15, 2014
17. "Robotic Musicianship," Geek Picnic Festival, St. Petersburg, Russia, August 9, 2014 (Keynote Address)
18. Commencement Address, Kennesaw State University, Kennesaw GA, December 2, 2013 (Keynote Address)
19. "Robotic Musicianship," Digital Design Life Conference (DLD), Tel Aviv, Israel, October 16, 2013
20. "On Musical Robots and Robotic Musicians," TEDx Peachtree, November 2, 2012
21. "Move to the Beat," The Coca Cola Olympics Launch Event, Shoreditch House, London, England, May 11, 2012 (Keynote Address)
22. "Travis – A Musical Robotic Companion," DLD conference, Tel Aviv, Israel, November 2, 2011
23. "Georgia Tech Center for Music Technology," New York Times Schools for Tomorrow Conference, The Times Center, NYC, NY, September 22, 2011
24. "Gesture-based human-robot Jazz improvisation," The International Conference of Machine Learning, Seattle, June 29, 2011 (Keynote Address)
25. "Towards Robotic Musicianship," TEDx Georgia Tech, Atlanta, April 9, 2011
26. "The Rise of the Robo-Sapiens," The World Economic Forum, Davos, Switzerland, January 29, 2011
27. "Reinventing the Musical Experience," Queen Mary University, Center for Digital Music, London, England, June 30, 2010
28. "Reinventing the Musical Experience," The Interdisciplinary Center (IDC) Communication School, Herzelia, Israel, June 23, 2010. (Keynote Address)

29. "Robotic Musicianship," Musenet 2010 , Petach Tikva, Israel, June 18, 2010
30. "Expanding the Musical Experience – from the Digital to the Physical and Back," Cape Town University School of Music, Cape Town, South Africa, June 2, 2010
31. "Robotic Musicianship," SIGGRAPH Asia, Yokohama Japan, December 18, 2009
32. "From Musical Robots to Musical Cell phones," FOO CAMP, Cambridge MA, March 28, 2009.
33. "Robotic Musicianship," the 11th Annual Chinese-American Kavli Frontiers of Science Symposium, the National Academy of Sciences, Irvine, CA, October 4, 2008
34. "Towards Robotic Musicianship," The 5th European Conference on Complex Systems Jerusalem, Israel, September 18, 2008 (Keynote Address)
35. "Robotic Musicianship," The International Conference on Human Robot Interaction, Technische Universitat München, Germany, August 2, 2008 (Keynote Address)
36. "Extending the Musical Experience - from the Acoustic to the Electronic and Back," Microsoft Research, Seattle, WA, July 21, 2008
37. "Robotic Musicianship," The Association for the Advancement of Artificial Intelligence (AAAI 2008) Robot Workshop and Exhibition, Chicago, IL, July 14, 2008
38. "Extending the Musical Experience - from the Acoustic to the Electronic and back," the International Conference on Intelligent Technologies for interactive entertainment, Cancun, Mexico, January 9, 2008. (Keynote Address).
39. "Perceptual Musical Robots," Center of Automation and Autonomous Systems, Technische Universitat München, Germany, November 22, 2007
40. "New Instruments for Musical Expression," Music Technology Mash-up Symposium, Shfayim, Israel, June 29, 2007
41. "Extending the Musical Experience – from the Acoustic to the Electronic and Back," the University of Pompeu Fabra, Barcelona, Spain, June 14, 2007
42. "Enhancing Musical Expression through Technology," Digital Life Design Conference, Munich, Germany, January 22, 2007
43. "Interactive Musical Robots," Robots at Play Festival, Odense, Denmark, September 14, 2006
44. "Jam'aa – an Interactive Drum Circle with a Robotic Percussionist," ACM SIGGRAPH 2006, Boston, MA, August 2, 2006
45. "Towards Robotic Musicianship," International Symposium for Music, Art, and Robotics (SMART), Bremen, Germany, June 14, 2006
46. "Music Technology – the Art and the Science," Hamaabada New Art Center, Jerusalem, Israel, March 18, 2006 (Keynote Address)
47. "The Music Technology Program at Georgia Tech," The Institute for Interdisciplinary Applications of Computer Science, University of Haifa, Israel, June 26, 2005

48. “Interconnected Musical Networks,” Computer Science Department, Hebrew University, Jerusalem, Israel, July 12, 2004
49. “Interconnected Musical Networks,” Australian Computer Music Conference, Perth, Australia, July 6, 2003. (Keynote Address)
50. “Collaborative Creation Tools – the Case of Interconnected Musical Networks,” IBM Research Laboratory, Haifa, Israel, June 22, 2003
51. “Interconnected Musical Networks - Bringing Expression and Thoughtfulness to Collaborative Music Making,” Music Department, McGill University, Montréal, Canada, January 12, 2003
52. “Hyperinstruments – New Approaches for Music Technology,” Canadian Undergraduate Technology Conference, Toronto, Canada, January 17, 2003

E. Commercialization

Patents

1. Gil Weinberg, Raghav Sanakarayarayman, Nitin Hugar, Qinying Lei, Georgia Tech Research Cooptation, Mixboard – AI driven mashup application for novices” (Pending)
2. Daniela Gilboa, Gil Weinberg Aivf Ltd., 2023, “System and method for representing a biological process via non-speech audio,” WO EP US AU AU2021340295A, Priority 2020-09-08 • Filed 2021-09-02 • Published 2023-05-11
3. Gil Weinberg, Ian Campbell, Roberto Aimi, Guy Hoffman Tovbot, 2013, “Smartphone and internet service enabled robot systems and methods,” WO US WO2013063381A1, Priority 2011-10-28 • Filed 2012-10-26 • Published 2013-05-02
4. Gil Weinberg, Jagadeeswaran Jayaprakash, Georgia Tech Research Corporation, 2008, “Detecting user gestures with a personal mobile communication device,” US US8175728B2, Priority 2007-12-13 • Filed 2008-07-23 • Granted 2012-05-08 • Published 2012-05-08
5. Gil Weinberg, Benedikt Loesch, Andrew Beck, Georgia Tech Research Corporation, “Gestural generation, sequencing and recording of music on mobile devices” US US8111241B2, Priority 2007-07-24 • Filed 2008-07-23 • Granted 2012-02-07 • Published 2012-02-07

Licenses

1. Invention disclosure 9152: “Mixboard: a music mashup application for novices,” licensed to Sound and Media Venture, 2023
2. Invention disclosure 8394: “Tensor Flow Robotic Drumming Arm,” license to Google, 2020
3. Invention Disclosure 5816: “Smartphone and Internet Service Enabled Robot,” licensed to self-started spinoff company Tovbot, 2012
4. Invention Disclosure 3960: “A Motion Based Controller for Music Performance,” licensed to Coca Cola for their Beat Maker app for the London Olympics, 2012

5. Invention Disclosure 3960: “A Motion Based Controller for Music Performance,” licensed to self-startup spinoff company, ZOOZ Mobile, 2008

Entrepreneurship

1. 2019 – present: RM Speaking, Atlanta, Georgia
Position: Founder and sole proprietor
Services: Music Technology consultancy and speaking services
 2. 2008 – 2015 : ZOOZ Mobile; Atlanta, Georgia
Position: Founder and CEO
Products: Mobile gaming applications including Zoozbeat (#1 music app on Apple app store and finalist of the Billboard Magazine best app for 2009) and My Beat Maker (winners of Webby Award 2012)
 3. 2011 – 2013 : Tovbot; Atlanta, Georgia
Position: Co-Founder and CTO
Products: Personal Robot Shimi, Finalist of the TechCrunch Disrupt Startup Competition 2012
- 1991 –1994: Sense Multimedia
Position: Co-Founder and CEO
Products: Multimedia titles including Karaoke Net.

F. Grants and Contracts

Title of Project: Data Driven Predictive Auditory Cues for Safety and Fluency in Human-Robot Interaction
Agency/Company: NSF:IIS
Total Dollar Amount: \$422,254
Role: Principal Investigator
Year: 2023

Title of Project: Piano Therapy – Music Based home app for Stroke Rehabilitation
Agency/Company: National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR). Part of \$4.6 Million grant titled TechSage 5.
Total Dollar Amount: \$60,000
Role: Co-Principal Investigator
Year: 2022- 2023

Title of Project: Shimon Sing Performance, Megaron Theater, Athens, Greece
Agency/Company: Jazz Democracy
Total Dollar Amount: \$25,000
Role: Principal Investigator
Year: 2022

Title of Project: Piano Transcripts
Agency/Company: AGT (a startup company)
Total Dollar Amount: \$60,000
Role: Principal Investigator
Year: 2021

Title of Project: Creating Trust Between Groups of Humans and Robots Using a Novel Music Driven Robotic Emotion Generator
Agency/Company: NSF: NRI - supplemental
Total Dollar Amount: \$133,980
Role: Principal Investigator
Year: 2020

Title of Project: Shimon Sings at the FOX
Agency/Company: Georgia Tech College of Computing
Total Dollar Amount: \$7,000
Role: Principal Investigator
Year: 2020

Title of Project: Drumming Robotic Prosthetic Arm
Agency/Company: Google
Total Dollar Amount: \$276,250
Role: Principal Investigator
Year: 2019

Title of Project: Creating Trust Between Groups of Humans and Robots Using a Novel Music Driven Robotic Emotion Generator
Agency/Company: NSF:NRI
Total Dollar Amount: \$669,912
Role: Principal Investigator
Year: 2020

Title of Project: Robotic Musicianship
Agency/Company: Hyphen Hub
Total Dollar Amount: 8,000
Role: Principal Investigator
Year: 2019

Title of Project: We Robot, Shimon Performance
Agency/Company: Aarhus Jazz Orchestra
Total Dollar Amount: \$25,000
Role: Principal Investigator
Year: 2019

Title of Project: Skywalker Hand – an ultrasonic sensor for predicting finger movement
Agency/Company: Georgia Tech Petit Institute
Total Dollar Amount: \$50,000
Role: Principal Investigator
Year: 2018

Title of Project: Robots Who Love Music – Performance and Exhibition
Agency/Company: Speelklok Museum, Utrecht, the Netherlands
Total Dollar Amount: \$50,000
Role: Principal Investigator
Year: 2018

Title of Project: A voice for personal robots – deep learning for voice synthesis for Shimi
Agency/Company: NVidia
Total Dollar Amount: \$50,000
Role: Principal Investigator
Year: 2018

Title of Project: Shimon Robot and Friend Performance
Agency/Company: Microsoft
Total Dollar Amount: \$10,000
Role: Principal Investigator
Year: 2018

Title of Project: Machine auditory scene analysis in an embedded wearable audio device
Agency/Company: SmartEar (A Startup company)
Total Dollar Amount: \$30,000
Role: Co-Principal Investigator
Year: 2017

Title of Project: Dexterous Robotic Prosthetic Control Using Deep Learning Pattern Prediction from Ultrasound Signal
Agency/Company: NSF:I-Corp
Total Dollar Amount: \$50,000
Role: Principal Investigator
Year: 2017

Title of Project: A Dexterous Prosthetic Arm for Musical Applications
Agency/Company: Georgia Research Alliance
Total Dollar Amount: \$50,000
Role: Principal Investigator
Year: 2017

Title of Project: An Intelligent Robotic Drumming Prosthesis
 Agency/Company: NSF: EAGER
 Total Dollar Amount: \$163,234
 Role: Principal Investigator
 Year: 2015

Title of Project: Sub-second human-robot synchronization
 Agency/Company: NSF: EAGER
 Total Dollar Amount: \$154,445
 Role: Principal Investigator
 Year: 2013

Title of Project: Multi Modal Robotic Musicianship Intelligence
 Agency/Company: NSF: HCC - Supplementary
 Total Dollar Amount: \$90,706
 Role: Principal Investigator
 Year: 2012

Title of Project: Drawn Together
 Agency/Company: NEH
 Total Dollar Amount: \$30,000
 Role: Facilitator
 Year: 2012

Title of Project: VR musical applications for treatment of Cerebral Palsy patients
 Agency/Company: Grammy Foundation
 Total Dollar Amount: \$17,250
 Role: Co - Principal Investigator
 Year: 2012

Title of Project: Interactive Music Analysis and Re-synthesis
 Agency/Company: NSF SBIR Phase II
 Total Dollar Amount: \$500,000
 Role: Author (submitted officially by the CEO of the company)
 Year: 2011

Title of Project: Robotic Musical Companion
 Agency/Company: Georgia Research Alliance
 Total Dollar Amount: \$50,000
 Role: Principal Investigator
 Year: 2011

Title of Project: Interactive Music Analysis and Re-synthesis
 Agency/Company: NSF SBIR Phase Ib
 Total Dollar Amount: \$22,650
 Role: Author (submitted officially by the CEO of the company)
 Year: 2010

Title of Project: Interactive Music Analysis and Re-synthesis
 Agency/Company: NSF SBIR Phase Ia
 Total Dollar Amount: \$149,650
 Role: Author (submitted officially by the CEO of the company)
 Year: 2010

Title of Project: Multi Modal Robotic Musicianship Intelligence
Agency/Company: NSF: HCC
Total Dollar Amount: \$456,724
Role: Principal Investigator
Year: 2009

Title of Project: The Robotic Musician
Agency/Company: NSF: HRI - supplemental
Total Dollar Amount: \$41,184
Role: Principal Investigator
Year: 2009

Title of Project: The Accessible Aquarium
Agency/Company: NSF: HRI - supplemental
Total Dollar Amount: 1,200,002
Role: Co - Principal Investigator
Year: 2009

Title of Project: Gesture Blue Phase II
Agency/Company: Georgia Research Alliance
Total Dollar Amount: \$100,000
Role: Principal Investigator
Year: 2008

Title of Project: The Accessible Aquarium
Agency/Company: NSF - SGR
Total Dollar Amount: \$87,000
Role: Co - Principal Investigator
Year: 2008

Title of Project: Gesture Blue Phase I
Agency/Company: Georgia Research Alliance
Total Dollar Amount: \$50,000
Role: Principal Investigator
Year: 2007

Title of Project: The Robotic Musician
Agency/Company: NSF: HRI
Total Dollar Amount: \$449,090
Role: Principal Investigator
Year: 2007

Title of Project: Robotic Musicianship
Agency/Company: Gvu Center Seed Grant
Total Dollar Amount: \$35,400
Role: Principal Investigator
Year: 2006

Title of Project: Interactive Musical Systems
Agency/Company: Georgia Tech Foundation
Total Dollar Amount: \$9,140
Role: Principal Investigator
Year: 2004

G. Selected Press Quotes

1. IEEE Spectrum Magazine, 1/26/24
“Made from beautifully fabricated steel and eight mobile arms, medusai can play percussion and strings with human musicians, dance with human dancers, and move in time to multiple human observers.”
2. Georgia Tech Alumni Magazine, Winter 2023
“Gil Weinberg: professor and of founding director of the Georgia Tech Center for Music Technology.” – a full page expert opinion about the future of music.
3. Market Tech Post, 6/6 / 23
“Georgia Tech Researchers Introduce Mixboard: A Revolutionary AI App making musical mashups a reality. Spearheaded by Professor Gil Weinberg and his talented team of students, this groundbreaking app harnesses the power of artificial intelligence (AI) to blend songs from various artists and genres into mesmerizing mashups.”
4. StudyFinds 8/1/23
“Revolutionary AI mixing app creates mind-blowing musical mashups with your favorite artists. Professor Gil Weinberg and his team at the Center for Music Technology have been working on a mashup tool for years, and now, with the advancements in technology, their vision has come to life.”
5. MIT Technology Review 2/10/23
(Jason Barnes_ was introduced to Gil Weinberg, a music technology professor at Georgia Tech, whose group collaborated with Barnes to engineer a new myoelectric drumming arm capable of reading his muscle movements and executing much more subtle hits. The new arm turned Barnes into a drumming superhero, enabling him to push beyond the limits of the human body with rhythms that no one else on the planet could touch.
6. Ekathimerini (Greek Daily Newspaper), 11/023/22
“The concert will be the first international demonstration of the robot’s new singing capabilities by performing songs that its creator, Gil Weinberg, wrote.”
7. The Tennessean, 03/23/22
“Alternative pop/rock group Coin played their infectious disco and funk-flavored single "Chapstick" on "Jimmy Kimmel Live" on Tuesday. They were joined by their metallic pal Shimon — a four-armed, "AI-driven" robot from Gil Weinberg’s Robotic Musicianship Lab at Georgia Tech Center of Music Technology.”
8. Reasons to Be Cheerful (David Byrne’s Publication), 1/23/22
“...Gil Weinberg, the founding director of the Georgia Tech Center for Music Technology, an eminent authority on artificial intelligence.”
9. Scientific American, 12/16/21
“Soh says he finds the (FOREST) performance fascinating and thinks it could bring value to the field of human-robot relationships. ‘The formation and dynamics of trust in human-robot teams is not well-understood,’ he says, ‘and this work may shed light on the evolution of trust in teams.’”
10. WABE (Atlanta NPR) 12/7/21
“The idea of the (FOREST) project is to build trust between humans and the machines, said Gil Weinberg, director of Georgia Tech’s Center for Music Technology.”
11. Scientific American 12/4/20
“The crowning glory of rap lies in the lyrics. In a recent paper, published in the proceedings of the 11th International Conference on Computational Creativity 2020, Weinberg’s research team outlines the technical advances that brought a rapping Shimon to life.”
12. IEEE Spectrum, 3/20/20
“Over that time, Gil Weinberg’s robots have progressed from being able to dance along to music that they hear, to being able to improvise along with it, to now being able to compose, play, and sing completely original songs.”

13. Decider, 12/19/19
 “.... (in a) a new documentary, hosted by Robert Downey Jr.... Gil Weinberg, the founding director of Georgia Tech’s center for Music Technology is using machine learning to have a robot play its own kind of music, based on pattern predictions it makes from music that is inputted into its memory. But what Weinberg is also doing is trying to extend that machine learning technology to create prosthetic hands that will move with much more precision than previously developed hands.”
14. TechCrunch, 10/11/18
 Shimon is a marimba-playing robot with some real soul. This crazy little robot, created by Gil Weinberg at the Georgia Tech Center for Music Technology, can listen to the other players around it and play out little ditties in response to the music. In short, it’s the world’s best jazz and hip-hop collaborator.”
15. IEEE Spectrum, 4/17/18
 “Because we write so much about futuristic, cutting edge technology, we’re often covering things that are so brand new that only one of them may exist in the world. Georgia Tech professor Gil Weinberg has been developing prosthetic limbs that can play music with the help of Jason Barnes, a drummer and amputee.”
16. Futurism, 1/12/17
 “Gil Weinberg, a professor at the Georgia Tech College of Design, and his lab developed a new prosthetic for Barnes that enabled him to play one of his favorite instruments: the drums. The prosthetic arm was equipped with a pair of drumsticks — one controlled by Barnes himself, while the other moved on it’s own and improvised it’s movements based on the music it heard nearby.”
17. Engadget, 12/11/17
 “Researchers at Georgia Tech have developed a prosthetic hand inspired by the bionic one given to Star Wars’ Luke Skywalker. What sets this one apart from other prosthetics is the amount of dexterity it offers, allowing users to move individual fingers at will.”
18. The Verge, 06/15/17
 “Just like Shimon here — a four-armed marimba-playing robot designed by Georgia Tech’s music technology center. Sure, Shimon is just the tip of the iceberg when it comes to AI making music, but just listen to those jazz-fusion vibes.”
19. Wired UK 6/14/17
 “It’s been in development for some years, but this is the first time (a robot) has composed its own music.”
20. Rolling Stone, May 23, 2016
 “It was certainly entertaining to watch Shimon, the improvising jazz robot, bop along to his human pals as he followed along on his marimba. Whether Shimon will unlock exciting and aesthetically intriguing melodies remains to be seen, but he is a very solid side-bot and some enterprising jam band should take him on the road immediately.”
21. Atlanta Business Journal, Jan 20, 2015
 “I believe the (Guthman) competition has established itself as the place for those who want get a glimpse of the future of musical performance and expression,” says Gil Weinberg, founding director of the Center For Music Technology at Georgia Tech and the organizer of the competition.
22. Atlanta Journal Constitution, May 11, 2014
 “Gil Weinberg, the founding director of Georgia Tech’s Center for Music Technology, likes to dream up bizarre machines and then build them. Weinberg has become famous in certain circles for developing robots that not only play music, but can improvise. He is the kind of futurist who demonstrates a technology breakthrough by jamming on a Miles Davis tune.”
23. Time Magazine, March 06, 2014
 “If you’re lucky enough to know Georgia Tech professor Gil Weinberg, maybe he will rig you up a robotic arm that can wield two drumsticks at once. It makes for interesting listening (and) the potential for a genre like drum-and-bass is pretty mind-blowing.”

24. New York Times, March 06, 2014
“Enter Gil Weinberg of the Georgia Institute of Technology who has built a number of musical robots, including one that plays the marimba. This concert will showcase sleek prosthesis that uses muscle sensors to let the drummer control his strokes and features a second stick with “a mind of its own,” turning him into a rhythmic cyborg.”
25. NPR Market Place, January 04, 2014
“If I said there's a machine that makes music by itself, you'd be unimpressed. But what If there's a robot that will improvise music along with you, that is to say, pick up on what you're playing and make something new? That's what Georgia Tech's music technology professor Gil Weinberg says he's done with the robot Shimon.”
26. The Independent, October 23, 2013
“One person who understands the challenges surrounding the development of new instruments is Gil Weinberg, Founding Director of the Georgia Tech Center for Music Technology. The center plays host to the Margaret Guthman musical instrument competition, which invites entrants to explore creative new ways that music can be played and experienced through new instruments.”
27. Wired, December 12, 2012
“To Shimon’s creator, roboticist and musician Gil Weinberg, the robot is a way of creating new kinds of music we’d never hear otherwise. That’s why he programmed Shimon not only with “human” musical concepts like tempo and style but also with a healthy dose of superhuman talents utilizing genetic algorithms and fractals.”
28. Wired, September 1, 2012
“A small robot holding a smartphone, called Shimi, won the hearts and minds of the technology press in June, in part on the strength of the below video. I know one of the people behind this project, Gil Weinberg. He is the head of Georgia Tech’s Center for Music Technology. I met him while judging music robots and he knows what he’s talking about.”
29. The Next Web, June 26, 2012
“Shimi is A Jaw-Dropping, Interactive Music-Loving Robot.”
30. Robot Magazine, January 2011
“Shimon is a real, center stage, jazz-playing musician. What makes Shimon exciting is not only that it can provide new levels of entertainment and expression, but that it is reaching new heights of human-robot interaction and artificial intelligence.”
31. Wired, December 5, 2008
“Gil Weinberg of Georgia Tech and graduate students from its Center for Music Technology built a powerful, entertaining application for the iPhone and iPod Touch that lets anyone make loops of music of varying complexity.”
32. The New Scientist, May 8, 2007
“The Robotic Percussionist sounded just great. Gil Weinberg and his team have done it again.”
33. CNN, October 3, 2006
“A professor of music technology at Georgia Tech, Gil Weinberg, enlisted the support of graduate student Scott Driscoll to create Haile -- the first truly robotic musician.”

V. Teaching

A. Courses Taught

Undergraduate Classes

1. MUSI 3450 Survey of Music Technology
2. MUSI 3500 Introduction to Computer Music
3. MUSI 4803 Computer Supported Interactive Music
4. ECE 2811 Vertical Integrated Project

Graduate Classes

1. MUSI 6004 Technology Ensemble
2. MUSI 6203 Music Technology Project Studio
3. MUSI 7000 Master Thesis Preparation
4. MUSI 7100 Music Tech Research Lab
5. MUSI 8001 Research Methods
6. MUSI 8002 Teaching Practicum
7. MUSI 9000 Doctoral Thesis Preparation
8. CS 8903 Special Problems
9. LCC 6318 Experimental Media

Post Doctorate Advisor

1. Marcelo Cicconet (2003-2014)
2. Guy Hoffman (2009-2011)

PhD Thesis Dissertation Advisor and Committee Member

1. Amit Rogel, PhD Advisor – Thesis: TBD, Georgia Institute of Technology, Atlanta, GA (expected 2026)
2. Raghav Sanakarayarayman, PhD Advisor – Thesis: TBD, Georgia Institute of Technology, Atlanta, GA (expected 2024)
3. Smith Jason , PhD Committee Member, Thesis: TBD, Georgia Institute of Technology, Atlanta, GA (expected 2024)

4. Ning Yang, PhD Advisor, Thesis: TBD, Georgia Institute of Technology, Atlanta, GA (2022)
5. Alison Jenkins, PhD Committee Member, Thesis: TBD, Georgia Institute of Technology, Atlanta, GA (2022)
6. Richard Savery, PhD Advisor, Thesis: Machine Learning Driven Musical Approaches for Real-Time Human-Robot Interaction, Georgia Institute of Technology, Atlanta, GA (2021)
7. Mike Winters, PhD Committee Member, Thesis: Empathic Effects of Auditory Heartbeats: A Neurophysiological Investigation, Georgia Institute of Technology, Atlanta, GA. (2019)
8. Sang won-Leigh, PhD Comitee Member, Thesis: Guitar Machine, Massachusetts Institute of Technology, Cambridge MA. (2018)
9. Mason Bretan, PhD Advisor, Thesis: Towards an Embodied Musical Mind, Georgia Institute of Technology, Atlanta, GA. (2017)
10. Jorge Marin, PhD Committee Member, Thesis: Robust Binaural Noise-Reduction Strategies With Binaural-Hearing-Aid Constraints: Design, Analysis And Practical Considerations (Electric and Computer Engineering), Georgia Institute of Technology, Atlanta, GA. (2012)
11. Tanya Markow, PhD Committee Member, Thesis: Mobile Music Touch (Interactive Computing), Georgia Institute of Technology, Atlanta, GA. (2010)
12. Mitchell Parry, PhD Committee Member, Thesis: Separation and Analysis of Multichannel Music Audio (Computer Science), Georgia Institute of Technology, Atlanta, GA/ (2007).

Master Thesis Advisor and Committee Member

1. Amit Rogel, MS Advisor, Georgia Institute of Technology, Atlanta, GA Thesis: Music and Movement Based Dancing for Non-Anthropomorphic Robots (2022)
2. Hanoi Hantrakul, MS Co-Advisor, Thesis: Regressing dexterous finger flexions using machine learning and multi-channel single element ultrasound transducers (2018)
3. Deepak Gopinath, MS Advisor and committee member for the Master thesis in Music Technology (MSMT), Thesis: "Enhancing Stroke Generation And Expressivity In Robotic Drummers - A Generative Physics Model Approach," Georgia Institute of Technology, Atlanta, GA. (2015)
4. Sang Won Lee, Committee member for the Master thesis in Music Technology (MSMT), Thesis: "Audience Participation Using Mobile Phones As Musical Instruments," Georgia Institute of Technology, Atlanta, GA. (2012)
5. Ryan Nikolaidis, MS Advisor and committee member for the Master thesis in Music Technology (MSMT), Thesis: "A Generative Model of Tonal Tension and its Application in Dynamic Real-time Sonification," Georgia Institute of Technology, Atlanta, GA. (2011)
6. Aaron Albin, MS Advisor and Committee member for the Master Thesis in Music Technology (MSMT), Thesis: "Swarm Robots for Music," Georgia Institute of Technology, Atlanta, GA. (2011)

7. Avinash Sastry, Committee member for the Master Thesis in Music Technology (MSMT), Thesis: “N-Gram Modeling Of Tabla Sequences Using Variable-Length Hidden Markov Models for Improvisation and Composition,” Georgia Institute of Technology, Atlanta, GA. (2011)
8. Sertan Senturk, Committee member for the Master Thesis in Music Technology (MSMT), Thesis: “Computational Modeling of Improvisation in Turkish Folk Music Using Variable-Length Markov Models,” Georgia Institute of Technology, Atlanta, GA. (2011)
9. Alex Rea, Committee member for the Master Thesis in Music Technology (MSMT), Thesis: “Generative Rhythmic Models,” Georgia Institute of Technology, Atlanta, GA. (2009)
10. Xiang Cao, Committee member for the Master Thesis in Music Technology (MSMT), Thesis: “Automatic Accompaniment of Vocal Melodies in the Context Of Popular Music,” Georgia Institute of Technology, Atlanta, GA. (2009)
11. Mark Godfrey, Committee member for the Master Thesis in Music Technology (MSMT) Thesis: “Hubs And Homogeneity: Improving Content-Based Music Modeling,” Georgia Institute of Technology, Atlanta, GA. (2008)
12. Aaron Levisohn, Committee member for the Master Thesis in Digital Media (DM), Thesis: “intelliChime – Exploring a Conversation Model of Information Retrieval Using Gestural Interaction,” Georgia Institute of Technology, Atlanta, GA. (2006)
13. Mayhew Seavey, Committee member for the Master Thesis in Digital Media (DM), Thesis: “Song Canvas – A System for Dynamic Music Playlist Generation,” Georgia Institute of Technology, Atlanta, GA. (2005)

Curriculum Development

1. Designed and developed 3 new courses for a newly approved BS in Music Technology program (2015)
2. Initiated, designed, co-wrote, and submitted an IGERT proposal in Music Technology at Georgia Tech (2012)
3. Initiated, designed, and developed the PhD program in Music Tech. (2009)
4. Initiated, designed, and developed the first music degree programs in Georgia Tech’s history the M.S degree Music Technology in Music Technology. The program featured fifteen new graduate level classes (2006)
5. Co-developed a proposal for a joint undergraduate degree with the Interactive Computing School at the College of Computing entitled B.S in Computational Music (BSCM). (2005)
6. Re-designed and created new syllabi for two undergraduate level music technology courses. (2003)
7. Founded the Musicology Department’s computer music studio. Designed the curriculum and taught the first music technology course at the Musicology Department. (1994)

VI. Service

Administrative Positions

1. Founding Director, Georgia Tech Robotic Musicianship Group (2003 – present)
2. Founding Director, Georgia Tech Center for Music Technology (2009 – present)
3. Founder and Organizer, The International Guthman Musical Instrument Competition (2008 – 2019)
4. Founding Director, Music Technology Graduate Program (2006 – 2021)

Academic Leadership Training

1. American Council on Education Fellow (2013 – 2014)
2. Council For Advancement and Support of Education Workshop (2013)
3. Society for College and University Planning (SCUP I, II and III Certificate) (2013)
4. Georgia Tech Leadership Round Table Training (2013)

Selected College and University Committees

1. College, Reappointment, Promotion and Tenure Committee (2015-2021)
2. Building Construction Faculty Search Committee (2021)
3. University, President/Provost Brand Review Committee (2014)
4. University, College of Architecture Dean Search Committee (2012)
5. University, TechArts Festival Committee – Chair (2012)
6. College, Architecture School Chair Search Committee (2011)
7. University, Institute Strategic Plan Committee – Core Member (2010)
8. College, Industrial Design School Chair Search Committee (2010)
9. College, Diversity Committee (member since 2003) – Chair (2009 – 2010)
10. University, Future Media Committee (2009)
11. College, Undergraduate Curriculum Committee (2005 – 2008)
12. University, Undergraduate Curriculum Committee (2005 – 2008)
13. University, Architecture Dean Search Committee (2007)

14. University, Research Center Task Force (2007)
15. University, GVV Center Steering Committee (2006)

Selected Professional Activities

1. Program Committee, Web Audio Conference
2. Program Committee, Creativity and Cognition Conference
3. Conference paper reviewer, International Computer Music Conference
4. Conference paper reviewer, International Conference for New Interfaces for Musical Expression
5. Committee member, Artist Selection for the Creative Capital Workshop
6. Proposal review panelist – National Science Foundation
7. Journal paper reviewer, EURASIP AMP Journal, Springer Press
8. Journal paper reviewer, Computer Music Journal, MIT Press
9. Journal paper reviewer, Advanced Robotics Journal, InTech Publishing
10. Co-Editor and reviewer, Journal of Audio, Speech and Music Processing, Hindawi Publishing Corporation
11. Conference paper reviewer, International Symposium In Robot and Human Interactive Communication
12. Conference paper reviewer, International Conference for Robotics and Automation
13. Conference paper reviewer, Computer Human Interface Conference
14. Journal paper reviewer, Leonardo Music Journal, MIT Press
15. Journal paper reviewer, International Journal of Arts and Technology, InderScience Publication
16. Session Chair, Robotic in Art and Music session
17. Conference paper reviewer, International Conference of Social Robotics
18. Journal paper reviewer, Advanced Robotics, IN-TECH Press
19. Journal paper reviewer, ACM Computer Survey Journal, The Association for Computing Press
20. Co-organizer, co-moderator and speaker at “Changing Tunes: Expanding Music Through Technology”
21. Dean’s Symposium on the Changing Nature of Practice, College of Architecture, Georgia Tech

22. Conference paper reviewer, The International Symposium on Wearable Computers
23. Program Committee member, ACM conference on Human Computer Interaction
24. Program Committee member, Society for Electro-Acoustic Music in the United States
25. Chair, Entertainment Session at the IEEE International Workshop on Robots and Human Interactive Communications

On-Campus Activities

1. Founding Director, Music Technology International Program with Queen Mary University in London
2. Co-organizer, judge, publicity, prize fund raising, The Margaret Guthman Musical Instrument Competition
3. Founding Chair, TechArts Festival
4. Founding Director, GTCMT Artist in Residence Program
5. Organizer of the Guest Lecture Series for MSMT
6. Member, College of Computing, Human Center Computing Committee
7. Chair, Diversity Committee
8. Member, Search Committee for the Music Technology Visiting Professor position
9. Co-funding Director, TechArts Program
10. Core Contributor, The Institute Strategic Plan Committee
11. Member, Search Committee for the Architecture School Chair
12. Member, Search Committee for the Industrial Design School Chair
13. Member, Search Committee for the Director of Jazz Bands position
14. Member, Search Committee for the Director of Orchestra position
15. Member, Steering Committee for Future Media Fest
16. Member, Institute Committees Nominations Committee
17. Member, Diversity Committee
18. Organization and coordination of the GTCMT Launch Event
19. Chair, College Curriculum Committee

20. Member, Dean of Architecture Search Committee
21. Advisor, Georgia Tech's GVV Center Advisory Committee
22. Member, Institute Undergraduate Curriculum Committee
23. Member, College Curriculum Committee
24. Member, Research Center Task Force
25. Undergraduate Curriculum Proposal Committee
26. Member, Focus Research Program on Technology for Human Vision
27. Member, Georgia Tech's GVV Center Steering Committee
28. Chair, Music Technology Search Committee
29. Online Presence Committee
30. Member, College Diversity Committee