

## Curriculum Vitae

---

PERSONAL INFORMATION	Name Home address Telephone number Email address	Nathan Keil 369 Congress Street, Troy, NY 12180 +1 716 930 8350 keiln@rpi.edu
EDUCATION	<b>Rensselaer Polytechnic Institute</b> , Troy, NY	
	<i>Architectural Acoustics, M.S.</i>	<b>May 2018 – May 2020</b>
	– Thesis: “Polyphonic pitch perception in rooms using deep learning networks with data rendered in virtual acoustic environments”	
	– Advisor: Prof. Jonas Braasch	
	<i>Applied Physics, B.S., Cum Laude</i>	<b>August 2014 – May 2018</b>
	– Concentration: Architectural Acoustics	
	– Minor: Music Technology	
RELEVANT COURSEWORK	Ensemble Nonlinear, Introduction to Deep Learning, Sonics Research Lab I & II, Sonification Art & Science, Sound Recording & Production, Music and Technology I & II, Engineering Acoustics, Architectural Acoustics I & II, Aural Architecture, Psychoacoustics, Music Theory, Computer Music.	
TECHNICAL SKILLS	<i>Programming:</i> C++, CSS, Git, HTML, MATLAB, Python, shell scripting, TensorFlow <i>Music Programming:</i> ChuckK, JackTrip, Max/MSP, MIDI, OSC, Pure Data <i>Graphics and Visuals:</i> Adobe Illustrator/Photoshop, L <sup>A</sup> T <sub>E</sub> X <i>Audio Software:</i> Pro Tools, Lilypond <i>Performance:</i> cello, guitar, voice (baritone), live electronics	
PROFESSIONAL EXPERIENCE	<b>Adobe Research</b> , San Francisco, CA	
	<i>Internship</i>	<b>August 2019 – November 2019</b>
	Wrote a Python module for an Audio Processing Library in order to streamline the data preprocessing pipeline for easier audio machine learning research.	
	<b>Rensselaer Polytechnic Institute</b> , Troy, NY	
	<i>Undergraduate Co-Op</i>	<b>June 2017 – December 2017</b>
	Built an audiovisual system designed to network remote music performers to a MIDI ensemble in an immersive environment.	
ADDITIONAL EXPERIENCE	<b>Acoustical Society of America RPI Student Chapter</b> , Troy, NY	
	<i>President</i>	<b>September 2018 – May 2019</b>
	<b>Ground Zero Basement</b> , Troy, NY	
	<i>Booking Manager</i>	<b>May 2018 – May 2019</b>
	Booking/promoting and event organizing for a DIY music venue.	
	<b>RPI Orchestra</b> , Troy, NY	
	<i>Principal Cellist</i>	<b>September 2017 – May 2018</b>

**Society of Physics Students RPI Chapter, Troy, NY**

*Vice President*

**May 2016 – May 2017**

*Secretary/Treasurer*

**May 2015 – May 2016**

**HONORS AND  
AWARDS**

Acoustical Society of America Student Design Competition Commendation Award  
(USD 700, 2017).

**PUBLICATIONS**

**Conference**

Keil, N., et al., “Polyphonic pitch perception in rooms using deep learning networks with data rendered in auditory virtual environments” *177th Meeting of the Acoustical Society of America*, 2019.

Çakmak, C., Huang, M., Keil, N., “Designing immersive audiovisual environments for music performers with disabilities” *International Symposium on Adaptive Technology in Music and Art*, 2017 (submitted).

**REFERENCES**

**Prof. Jonas Braasch**  
RPI  
Troy, NY

**Prof. Rob Hamilton**  
RPI  
Troy, NY

**Juan-Pablo Caceres**  
Adobe Research  
San Francisco, CA