

# Juliette Regimbal

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## Education

- 2021–Present **PhD Electrical Engineering**, *McGill University*, Montréal QC.  
Doctorate in Electrical Engineering. Recipient of a Vadasz Fellowship (McGill Engineering Doctoral Award). Supervised by Professor Jeremy Cooperstock in the Shared Reality Lab.
- 2020–2021 **M.Sc. Electrical Engineering\***, *McGill University*, Montréal QC.  
Master of Science in Electrical Engineering. Supervised by Professor Jeremy Cooperstock. Research interests include human-computer interaction, multimodal design, and haptic interactions. Degree not completed due to fast tracking into a doctoral program.
- 2015–2020 **B.Eng. Computer Engineering**, *McGill University*, Montréal QC.  
Bachelor of Computer Engineering. J. W. McConnel Scholarship. Graduated with a GPA of 3.30.

## Experience

### Vocational

- 2021–Present **Architecture Lead**, *IMAGE Project, McGill University*.  
Person responsible for software architecture design for the IMAGE project.
- Fall **Teaching Assistant/Grader**, McGill University.
- 2020–2023 & Winter 2021–2023 Teaching assistant and grader for the Human Computer Interaction, Embedded Systems, and Haptics courses.
- January–December 2020 **Independent Consultant**, *Measuring Polyphony*.  
Software developer for the Measuring Polyphony project directed by Professor Karen Desmond. Tasks focused on development of the Measuring Polyphony Editor for human entry of 16th/17th century mensural-notation music from an existing manuscript available via the International Image Interoperability Framework.
- 2018–2020 **Casual Research Assistant**, *Schulich School of Music, Montréal QC*.  
Software developer for the *Single Interface for Music Score Searching and Analysis* project at the Distributed Digital Music Archives and Libraries Lab directed by Professor Ichiro Fujinaga. Specifically working on corrections in optical music recognition by contributing to Verovio, an open-source music engraving software, and developing the online square-notation music editor Neon.
- May–June 2016 **Stagiaire**, *Matrox Electronic Systems Ltd.*, Dorval QC.  
Worked in Video Products Group with software engineers towards the release of a new version of their SDK, and on new features for later versions.

### Miscellaneous

- 2021 **Demo Paper Reviewer**, *IEEE World Haptics Conference 2021*.  
Reviewer for two demo papers (1 page each) for the IEEE World Haptics Conference in 2021.

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## Languages

English	Native	
French	Intermediate	<i>Level 6, Échelle québécoise des niveaux de compétence</i>

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## Computer skills

Programming Languages (by proficiency)	C/C++, JavaScript/Typescript, Python, Java, Rust, and ARM assembly
Familiar with	UNIX-like systems (especially Linux), Docker, Scrum-style Agile, FPGAs, Microcontrollers, and Git

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## Projects

- 2020–2021 **Becoming**, *Operatic VR Experience*.  
*Becoming* is a virtual reality experience based on a poem by Rumi. The work cycles across scales of life and matter, starting at the size of molecules and moving up through plants and animals to cities and stars. While graphics and spatialized audio are heavily featured in *Becoming*, there are also vibrotactile effects rendered across the body in response to interactions and thematic events. My role is to design and implement these effects in collaboration with the main team at the Sonic Arts R&D Group, UC San Diego.
- 2019 **OR and ICU Haptic Alarms**, *B.Eng. Capstone Project*.  
The high amount of noise in hospital environments caused by medical alarms is detrimental to both clinicians and patients. Reducing this noise could greatly improve the well-being of clinicians and medical outcomes for patients. The project sought to do this by developing a haptic display using one vibrotactile actuator capable of conveying the states of three vital signs continuously and in parallel. Supervised by Professor Jeremy Cooperstock.
- 2015 **Blade Flapping in Quadrotors**, *Independent Research*, Warren NJ.  
Conducted individual research into blade flapping angles in small quadrotors and their effect on stability. Research involved designing programs to monitor the rotational velocity of the rotor, modelling expected flapping angles using existing works, and numerous experiments in a wind tunnel. The project specifically focused on how varied accelerations might cause deviation from typical models. Supervised by Dr. Sophia Gershman.

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## Selected Publications

- [1] H. Elbaggari, R. Guerra, S. Knappe, and J. Regimbal, "Crescendo: Haptic exploration of scores for novice musicians with dyslexia," in *2021 IEEE World Haptics Conference (WHC)*, IEEE, Jul. 2021. DOI: 10.1109/whc49131.2021.9517205.
- [2] J. Regimbal and M. M. Wanderley, "Interpolating audio and haptic control spaces," in *NIME 2021*, Shanghai, China: PubPub, Jun. 2021. DOI: 10.21428/92fbeb44.1084cb07.

- [3] Y. Yoo, J. Regimbal, and J. R. Cooperstock, "Identification and information transfer of multi-dimensional tactons presented by a single vibrotactile actuator," in *2021 IEEE World Haptics Conference (WHC)*, IEEE, Jul. 2021. DOI: 10.1109/whc49131.2021.9517169.
- [4] J. Regimbal, N. Radi, A. Weill-Duflos, and J. R. Cooperstock, "Single-actuator simultaneous haptic rendering for multiple vital signs," in *HCI International 2020 - Late Breaking Papers: Multimodality and Intelligence*, Copenhagen, Denmark, 2020. DOI: 10.1007/978-3-030-60117-1\_19.
- [5] J. Regimbal, G. Vigliensoni, C. Hutnyk, and I. Fujinaga, "IIF-based lyric and neume editor for square-notation manuscripts," in *Music Encoding Conference Proceedings 2020*, Jul. 22, 2020, pp. 15–18. DOI: 10.17613/d41w-n008.
- [6] J. Regimbal, Z. McLennan, G. Vigliensoni, A. Tran, and I. Fujinaga, "Neon2: A verovio-based square-notation editor," Music Encoding Conference 2019, University of Vienna, Vienna, Austria, May 31, 2019.