

Website: [voletiv.github.io](https://voletiv.github.io)[Google Scholar](#)[LinkedIn](#)[GitHub](#)

EDUCATION	<p><b>Mila, University of Montreal, Canada</b> <span style="float: right;"><i>Fall 2018 - present</i></span>          PhD in Computer Science — <i>Supervisor</i>: Prof. Christopher Pal <span style="float: right;">(A) 4.0 / 4.3</span></p> <p><b>Indian Institute of Technology (IIT), Kharagpur, India</b> <span style="float: right;"><i>2009 - 2014</i></span>          Dual Degree (B.Tech. (H) + M.Tech.) in Electrical Engineering <span style="float: right;">8.44 / 10</span>          with Master's specialization in Instrumentation and Signal Processing</p>
RESEARCH EXPERIENCE	<p><b>Research projects</b>: Multi-scale image generation using continuous normalizing flows; Differentiable 3D simulation [4]; Self-supervised video prediction using Neural ODEs [6]; Neural rendering</p> <p><b>University of Guelph, Canada</b> — Visiting Researcher <span style="float: right;"><i>Dec 2019 - present</i></span>          • <i>Supervisor</i>: Prof. Graham Taylor</p> <p><b>Google, Mountain View, USA</b> — Research Intern <span style="float: right;"><i>Sep-Dec 2019</i></span>          • <i>Team</i>: Google AI Perception, <i>Supervisors</i>: Bryan Seybold, Sourish Chaudhuri          • Research on multimodal semi-supervised Active Speaker Detection in videos</p> <p><b>IIIT Hyderabad, India</b> — Research Fellow; <i>Supervisor</i>: Prof. C. V. Jawahar <span style="float: right;"><i>May 2017 - Aug 2018</i></span>          • Synthesized educational videos in regional Indian languages by generating lips from audio          • Full paper published at ICASSP 2019 [7], short paper published at CVPR 2018 Workshop ??</p>
OTHER EXPERIENCE	<p><b>Reviewer</b> — NeurIPS 2021, ICCV 2021, CVPR 2021 (<i>Outstanding Reviewer</i>), ICLR 2020, NeurIPS 2020, ICML 2020, NeurIPS 2019, workshops</p> <p><b>OWCV 2021</b> (Canadian Computer Vision workshop), Canada — Organizer <span style="float: right;"><i>Feb-Apr 2021</i></span></p> <p><b>GRAPHQUON 2020</b> (Canadian Computer Graphics workshop), Canada — Organizer <span style="float: right;"><i>Oct-Dec 2020</i></span></p> <p><b>Blue Lion Labs, Canada</b> — AI Advisor <span style="float: right;"><i>Oct 2020 - present</i></span></p> <p><b>University of Montreal, Montreal, Canada</b> — Teaching Assistant          • Fundamentals of Machine Learning (IFT 6390) by Prof. Ioannis Mitliagkas <span style="float: right;"><i>Sep-Dec 2020</i></span></p> <p><b>NextAI - Toronto, Canada</b> — AI Scientist in Residence <span style="float: right;"><i>Mar-Sep 2020</i></span></p> <p><b>IVADO/Mila Deep Learning School, Montreal, Canada</b> — Teaching Assistant <span style="float: right;"><i>Sep 9-13, 2019</i></span></p> <p><b>NextAI - Montreal, Canada</b> — Scientist in Residence <span style="float: right;"><i>Apr-Sep 2019</i></span></p> <p><b>Playment, Bengaluru, India</b> — Computer Vision Consultant <span style="float: right;"><i>Jan-Jun 2018</i></span>          • Worked on semantic segmentation models for autonomous driving</p> <p><b>TalentSprint, Hyderabad, India</b> — Mentor, Foundations of AI &amp; ML <span style="float: right;"><i>Jan-May 2018</i></span>          • Designed and presented tutorials on machine learning, and mentored industry professionals</p>
RESEARCH PAPERS (RECENT)	<p>[1] “Multi-Resolution Continuous Normalizing Flows”, <a href="#">V. Voleti</a>, C. Finlay, A. Oberman, C. Pal - <i>Preprint [arXiv]</i></p> <p>[2] “Bias Mitigation of Face Recognition Models Through Calibration”, T. Salvador, S. Cairns, <a href="#">V. Voleti</a>, N. Marshall, A. Oberman - <i>Preprint [arXiv]</i></p> <p>[3] “Improved Predictive Uncertainty using Corruption-based Calibration”, T. Salvador, <a href="#">V. Voleti</a>, A. Iannantuono, A. Oberman - <i>Preprint [arXiv]</i></p> <p>[4] “gradSim: Differentiable simulation for system identification and visuomotor control”, K. M. Jatavallabhula, M. Macklin, F. Golemo, <a href="#">V. Voleti</a>, L. Petrini, M. Weiss, B. Considine, J. Parent-Lévesque, K. Xie, K. Erleben, L. Paull, F. Shkurti, D. Nowrouzezahrai, S. Fidler - <i>ICLR 2021 [arXiv] [OpenReview]</i></p> <p>[5] “Learning to Combine Top-Down and Bottom-Up Signals in Recurrent Neural Networks with Attention over Modules”, S. Mittal, A. Lamb, A. Goyal, <a href="#">V. Voleti</a>, M. Shanahan, G. Lajoie, M. Mozer, Y. Bengio - <i>ICML 2020 [arXiv]</i></p> <p>[6] “Simple Video Generation using Neural ODEs”, <a href="#">V. Voleti*</a>, D. Kanaa*, S. E. Kahou, C. Pal - <i>NeurIPS 2019 Workshop [pdf]</i></p> <p>[7] “Cross-Language Speech Dependent Lip-Synchronization”, <a href="#">V. Voleti*</a>, A. Jha*, V. P. Namboodiri, C. V. Jawahar - <i>ICASSP 2019 [pdf]</i></p>

AWARDS, TALKS & OTHER EFFORTS	<i>Dec 2020</i> - Microsoft Diversity Award for Doctoral Research	
	<ul style="list-style-type: none"> <li>• <i>Apr 2021</i> - “Training GANs by Solving ODEs” — Mila, Canada <a href="#">[slides]</a></li> <li>• <i>Feb 2021</i> - “Score-based Generative Models” — Mila, Canada <a href="#">[slides]</a></li> <li>• <i>Sep 2020</i> - “Continuous Normalizing Flows” — Mila, Canada <a href="#">[slides]</a></li> <li>• <i>Jul 2020</i> - “GANs: the story so far” — Summer Symposium on AI Research, India <a href="#">[slides]</a> <a href="#">[video]</a></li> <li>• <i>Jul 2020</i> - “A brief tutorial on Neural ODEs” — Mila, Canada <a href="#">[slides]</a> <a href="#">[video]</a></li> <li>• <i>Apr 2020</i> - “Mathematics of Neural ODEs” — University of Guelph, Canada <a href="#">[slides]</a></li> <li>• <i>Jan 2020</i> - “Simple Video Generation using Neural ODEs” — IIIT Hyderabad, India <a href="#">[slides]</a></li> <li>• <i>May 2019</i> - Tutorial on “GANs” — <a href="#">AI for Social Good Summer Lab</a>, Montreal</li> <li>• <i>Jan 2019</i> - Released code for Self-Attention GAN in PyTorch, converting from TensorFlow code released by Google Brain <a href="#">[GitHub]</a></li> <li>• <i>Oct 2018</i> - “BigGAN” — Mila, University of Montreal, Canada <a href="#">[slides]</a></li> <li>• <i>Feb 2018</i> - “Image de-fencing using RGB-D data” — MPI Informatics, Saarbrücken, Germany <a href="#">[slides]</a></li> <li>• <i>Feb 2018</i> - “Intuition behind LSTMs” at IIIT Hyderabad, India <a href="#">[slides]</a></li> <li>• <i>Nov 2017</i> - Won the SMS Classification challenge, participated in the Video Action Recognition challenge in the 2017 <a href="#">Hack2Innovate</a> hackathon in Bangalore, India</li> <li>• <i>Aug 2017</i> - “Mathematics of back-propagation in multi-layer perceptrons” — GreyOrange Robotics, India, and at IIIT-Hyderabad, India <a href="#">[slides]</a></li> <li>• <i>Jul 2017</i> - Attended summer schools on <a href="#">Computer Vision</a> and <a href="#">Machine Learning</a> at IIIT-Hyderabad <ul style="list-style-type: none"> <li>– Stood 3<sup>rd</sup> in Computer Vision Summer School out of 120+ participants, rewarded full fee waiver</li> <li>– Stood 4<sup>th</sup> in Machine Learning Summer School out of 120+ participants, rewarded full fee waiver</li> </ul> </li> <li>• <i>Apr 2009</i> - Qualified JEE 2009 by IIT at 99.7 percentile, with All India Rank of 1330 (out of 384,977)</li> </ul>	
WORK EXPERIENCE	<b>GreyOrange Robotics</b> , Gurgaon, India — Image Processing Engineer	<i>Feb 2016 - May 2017</i>
	<ul style="list-style-type: none"> <li>• Developed computer vision module for video processing in real time for warehouse automation</li> <li>• Research paper based on work is published by ACM at ICIDE 2017</li> </ul>	
	<b>Airbus</b> , Bengaluru, India — Associate Engineer	<i>Jul 2014 - Feb 2016</i>
	<ul style="list-style-type: none"> <li>• Involved in development and integration of avionics systems for the long-range aircrafts family</li> <li>• Simulated signal-level modifications to the Flight Warning Computer, adopting standard avionics coding guidelines (DO-178B)</li> </ul>	
THESIS PROJECTS	<i>Supervisor</i> : Prof. Rajiv Sahay, Electrical Engineering, IIT KHARAGPUR, India	
	<b>Master’s thesis</b> — “De-fencing of Images using RGB-D Data”	<i>2013 - 2014</i>
	<ul style="list-style-type: none"> <li>• Elimination of fence-like occlusions, and inpainting of images using RGB-D data</li> <li>• Nominated for Best M.Tech. Project Award among three departments (Electrical, Electronics, CS)</li> <li>• Research paper <a href="#">??</a> based on work is published in the proceedings of ICAPR 2015</li> </ul>	
	<b>Bachelor’s thesis</b> — “Identification of Bilabial Lip Closures in Audio and Video”	<i>2012 - 2013</i>
	<ul style="list-style-type: none"> <li>• Measurement of synchronization between audio and video using bilabial cues in both modes</li> </ul>	
PAST RESEARCH INTERNSHIPS	<b>KU Leuven</b> , Belgium — <i>Supervisor</i> : Prof. Ingrid Verbauwhede, ESAT	<i>Summer 2013</i>
	<ul style="list-style-type: none"> <li>• Designed arithmetic operations using Carry-Free Logic, simulated circuits in Xilinx</li> </ul>	
	<b>IIT Kharagpur</b> , India — <i>Supervisor</i> : Prof. Aurobinda Routray, Electrical Engineering	<i>Summer 2012</i>
	<ul style="list-style-type: none"> <li>• Made a gesture recognition program in MATLAB using Hidden Markov Models</li> </ul>	
	<b>Imperial College</b> , UK — <i>Supervisor</i> : Prof. Peter Cheung, Electrical & Electronics	<i>Summer 2011</i>
	<ul style="list-style-type: none"> <li>• Measured the relative power consumption among the LookUp Tables (LUTs) of an FPGA</li> </ul>	
SKILLS	C/C++, CUDA, HTML/CSS, Javascript, Keras, MATLAB, OpenCV, Python, PyTorch, Tensorflow	