

	Website: voletiv.github.io	Google Scholar	LinkedIn	GitHub
EDUCATION	Mila, University of Montreal, Canada PhD in Computer Science — <i>Supervisor</i> : Prof. Christopher Pal			Fall 2018 - present (A) 4.0 / 4.3
	Indian Institute of Technology (IIT), Kharagpur, India Dual Degree (B.Tech. (H) + M.Tech.) in Electrical Engineering with Master's specialization in Instrumentation and Signal Processing			2009 - 2014 8.44 / 10
RESEARCH EXPERIENCE	Research projects : Multi-scale image generation using continuous normalizing flows; Differentiable 3D simulation [1]; Self-supervised video prediction using Neural ODEs [3]; Neural rendering			
	University of Guelph, Canada — Visiting Researcher • <i>Supervisor</i> : Prof. Graham Taylor			Dec 2019 - present
	Google, Mountain View, USA — Research Intern • <i>Team</i> : Google AI Perception, <i>Supervisors</i> : Bryan Seybold, Sourish Chaudhuri • Research on multimodal semi-supervised Active Speaker Detection in videos			Sep-Dec 2019
	IIIT Hyderabad, India — Research Fellow; <i>Supervisor</i> : Prof. C. V. Jawahar • Synthesized educational videos in regional Indian languages by generating lips from audio • Full paper published at ICASSP 2019 [5], short paper published at CVPR 2018 Workshop [6]			May 2017 - Aug 2018
OTHER EXPERIENCE	Reviewer — ICCV 2021, CVPR 2021, ICLR 2020, NeurIPS 2020, ICML 2020, NeurIPS 2019, workshops			
	Blue Lion Labs, Canada — AI Advisor			Oct 2020 - present
	GRAPHQUON 2020 (Canadian Computer Graphics Workshop), Canada — Organizer			Oct-Dec 2020
	University of Montreal, Montreal, Canada — Teaching Assistant • Fundamentals of Machine Learning (IFT 6390) by Prof. Ioannis Mitliagkas			Sep-Dec 2020
	NextAI - Toronto, Canada — AI Scientist in Residence			Mar-Sep 2020
	IVADO/Mila Deep Learning School, Montreal, Canada — Teaching Assistant			Sep 9-13, 2019
	NextAI - Montreal, Canada — Scientist in Residence			Apr-Sep 2019
	Playment, Bengaluru, India — Computer Vision Consultant • Worked on semantic segmentation models for autonomous driving			Jan-Jun 2018
	TalentSprint, Hyderabad, India — Mentor, Foundations of AI & ML • Designed and presented tutorials on machine learning, and mentored industry professionals			Jan-May 2018
RESEARCH PAPERS	<ol style="list-style-type: none"> [1] K. M. Jatavallabhula, M. Macklin, F. Golemo, <u>V. Voleti</u>, L. Petrini, M. Weiss, B. Considine, J. Parent-Lévesque, K. Xie, K. Erleben, L. Paull, F. Shkurti, D. Nowrouzezahrai, S. Fidler, “gradSim: Differentiable simulation for system identification and visuomotor control” - <i>ICLR 2021</i> [OpenReview] [2] S. Mittal, A. Lamb, A. Goyal, <u>V. Voleti</u>, M. Shanahan, G. Lajoie, M. Mozer, Y. Bengio, “Learning to Combine Top-Down and Bottom-Up Signals in Recurrent Neural Networks with Attention over Modules” - <i>ICML 2020</i> [arxiv] [3] <u>V. Voleti</u>*, D. Kanaa*, S. E. Kahou, C. Pal, “Simple Video Generation using Neural ODEs” - <i>NeurIPS 2019 Workshop</i> [pdf] [4] V. Michalski, <u>V. Voleti</u>, S. E. Kahou, A. Oritz, P. Vincent, C. Pal, D. Precup, “Comparing Normalization in Conditional Computation Tasks” - <i>ICML 2019 Workshop</i> [arxiv] [5] <u>V. Voleti</u>*, A. Jha*, V. P. Namboodiri, C. V. Jawahar, “Cross-Language Speech Dependent Lip-Synchronization” - <i>ICASSP 2019</i> [pdf] [6] <u>V. Voleti</u>*, A. Jha*, V. P. Namboodiri, C. V. Jawahar, “Lip-Synchronization for Dubbed Instructional Videos” - <i>CVPR 2018 Workshop</i> [pdf] [7] S. Jonna, <u>V. Voleti</u>, R. R. Sahay, and M. S. Kankanhalli, “A Multimodal Approach for Image De-fencing and Depth Inpainting” - <i>ICAPR 2015</i> [pdf, IEEE] 			

AWARDS, TALKS & OTHER EFFORTS	<i>Dec 2020</i> - Microsoft Diversity Award for Doctoral Research	
	<ul style="list-style-type: none"> • <i>Feb 2021</i> - “Score-based Generative Models” — Mila, Canada [slides] • <i>Sep 2020</i> - “Continuous Normalizing Flows” — Mila, Canada [slides] • <i>Jul 2020</i> - “GANs: the story so far” — Summer Symposium on AI Research, India [slides] [video] • <i>Jul 2020</i> - “A brief tutorial on Neural ODEs” — Mila, Canada [slides] [video] • <i>Apr 2020</i> - “Mathematics of Neural ODEs” — University of Guelph, Canada [slides] • <i>Jan 2020</i> - “Simple Video Generation using Neural ODEs” — IIIT Hyderabad, India [slides] • <i>May 2019</i> - Tutorial on “GANs” — AI for Social Good Summer Lab, Montreal • <i>Jan 2019</i> - Released code for Self-Attention GAN in PyTorch, converting from TensorFlow code released by Google Brain [GitHub] • <i>Oct 2018</i> - “BigGAN” — Mila, University of Montreal, Canada [slides] • <i>Feb 2018</i> - “Image de-fencing using RGB-D data” — MPI Informatics, Saarbrücken, Germany [slides] • <i>Feb 2018</i> - “Intuition behind LSTMs” at IIIT Hyderabad, India [slides] • <i>Nov 2017</i> - Won the SMS Classification challenge, participated in the Video Action Recognition challenge in the 2017 Hack2Innovate hackathon in Bangalore, India • <i>Aug 2017</i> - “Mathematics of back-propagation in multi-layer perceptrons” — GreyOrange Robotics, India, and at IIIT-Hyderabad, India [slides] • <i>Jul 2017</i> - Attended summer schools on Computer Vision and Machine Learning at IIIT-Hyderabad <ul style="list-style-type: none"> – Stood 3rd in Computer Vision Summer School out of 120+ participants, rewarded full fee waiver – Stood 4th in Machine Learning Summer School out of 120+ participants, rewarded full fee waiver • <i>Apr 2009</i> - Qualified JEE 2009 by IIT at 99.7 percentile, with All India Rank of 1330 (out of 384,977) 	
WORK EXPERIENCE	GreyOrange Robotics , Gurgaon, India — Image Processing Engineer	<i>Feb 2016 - May 2017</i>
	<ul style="list-style-type: none"> • Developed computer vision module for video processing in real time for warehouse automation • Research paper based on work is published by ACM at ICIDE 2017 	
	Airbus , Bengaluru, India — Associate Engineer	<i>Jul 2014 - Feb 2016</i>
	<ul style="list-style-type: none"> • Involved in development and integration of avionics systems for the long-range aircrafts family • Simulated signal-level modifications to the Flight Warning Computer, adopting standard avionics coding guidelines (DO-178B) 	
THESIS PROJECTS	<i>Supervisor</i> : Prof. Rajiv Sahay, Electrical Engineering, IIT KHARAGPUR, India	
	Master’s thesis — “De-fencing of Images using RGB-D Data”	<i>2013 - 2014</i>
	<ul style="list-style-type: none"> • Elimination of fence-like occlusions, and inpainting of images using RGB-D data • Nominated for Best M.Tech. Project Award among three departments (Electrical, Electronics, CS) • Research paper [7] based on work is published in the proceedings of ICAPR 2015 	
	Bachelor’s thesis — “Identification of Bilabial Lip Closures in Audio and Video”	<i>2012 - 2013</i>
	<ul style="list-style-type: none"> • Measurement of synchronization between audio and video using bilabial cues in both modes 	
PAST RESEARCH INTERNSHIPS	KU Leuven , Belgium — <i>Supervisor</i> : Prof. Ingrid Verbauwhede, ESAT	<i>Summer 2013</i>
	<ul style="list-style-type: none"> • Designed arithmetic operations using Carry-Free Logic, simulated circuits in Xilinx 	
	IIT Kharagpur , India — <i>Supervisor</i> : Prof. Aurobinda Routray, Electrical Engineering	<i>Summer 2012</i>
	<ul style="list-style-type: none"> • Made a gesture recognition program in MATLAB using Hidden Markov Models 	
	Imperial College , UK — <i>Supervisor</i> : Prof. Peter Cheung, Electrical & Electronics	<i>Summer 2011</i>
	<ul style="list-style-type: none"> • Measured the relative power consumption among the LookUp Tables (LUTs) of an FPGA 	
SKILLS	C/C++, CUDA, HTML/CSS, Javascript, Keras, MATLAB, OpenCV, Python, PyTorch, Tensorflow	