

	Website: voletiv.github.io	Google Scholar	LinkedIn	GitHub
EDUCATION				
	Mila, University of Montreal, Canada			<i>Fall 2018 - present</i>
	PhD in Computer Science — <i>Supervisor:</i> Prof. Christopher Pal			4.0 / 4.3
	Indian Institute of Technology (IIT), Kharagpur, India			<i>2009 - 2014</i>
	Dual Degree (B.Tech. (H) + M.Tech.) in Electrical Engineering with Master's specialization in Instrumentation and Signal Processing			8.44 / 10
RESEARCH EXPERIENCE				
	Research projects: Multi-scale image generation using continuous normalizing flows; Self-supervised video prediction for autonomous driving using Neural ODEs; Neural rendering; Differentiable 3D simulation			
	University of Guelph, Canada — Visiting Researcher			<i>Dec 2019 - present</i>
	• <i>Supervisor:</i> Prof. Graham Taylor			
	Google, Mountain View, USA — Research Intern			<i>Sep-Dec 2019</i>
	• <i>Team:</i> Google AI Perception, <i>Supervisors:</i> Bryan Seybold, Sourish Chaudhuri			
	• Research on multimodal semi-supervised Active Speaker Detection in videos			
	IIIT Hyderabad, India — Research Fellow; <i>Supervisor:</i> Prof. C. V. Jawahar			<i>May 2017 - Aug 2018</i>
	• 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]			
OTHER EXPERIENCE				
	Reviewer — ICLR 2020, NeurIPS 2020, ICML 2020, CCAI @ ICLR 2020, ICLR 2020, CCAI @ NeurIPS 2019			
	Blue Lion Labs, Canada — AI Advisor			<i>Oct 2020 - present</i>
	GRAPHQUON 2020 (Graphics mini-conference), Canada — Organizer			<i>Oct-Dec 2020</i>
	University of Montreal, Montreal, Canada — Teaching Assistant			
	• Fundamentals of Machine Learning (IFT 6390) by Ioannis Mitliagkas			<i>Sep-Dec 2020; Sep 2019</i>
	NextAI, Toronto, Canada — AI Scientist in Residence			<i>Mar-Sep 2020</i>
	IVADO/Mila Deep Learning School, Montreal, Canada — Teaching Assistant			<i>Sep 9-13, 2019</i>
	NextAI, Montreal, Canada — AI Scientist in Residence			<i>Apr-Sep 2019</i>
	Playment, Bengaluru, India — Computer Vision Consultant			<i>Jan-Jun 2018</i>
	• Worked on semantic segmentation models for autonomous driving			
	TalentSprint, Hyderabad, India — Mentor, Foundations of AI & ML			<i>Jan-May 2018</i>
	• Designed and presented tutorials on machine learning, and mentored industry professionals			
RESEARCH PAPERS				
	[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, S. Fidler, D. Nowrouzezahrai, “Introducing GradSim: Differentiable Simulation for Self-Supervised Parameter Estimation from Video” - <i>MAIS 2020</i>			
	[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]			

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)
TALKS & OTHER EFFORTS	<ul style="list-style-type: none"> <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>Aug 2017</i> - “Mathematics of back-propagation in multi-layer perceptrons” — GreyOrange Robotics, India, and at IIIT-Hyderabad, India [slides] Attended summer schools on Computer Vision and Machine Learning at IIIT-Hyderabad in 2017 <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 Won the SMS Classification challenge, participated in the Video Action Recognition challenge in the 2017 Hack2Innovate hackathon in Bangalore, India Qualified JEE 2009 by IIT at 99.7 percentile, with All India Rank of 1330 (out of 384,977)
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