

	Website: <a href="https://voletiv.github.io">voletiv.github.io</a>	<a href="#">Google Scholar</a>	<a href="#">LinkedIn</a>	<a href="#">GitHub</a>
EDUCATION	<p><b>Mila, University of Montreal, Canada</b> <span style="float: right;">Fall 2018 - present (anticipated 08/2023)</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;">2009 - 2014</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 on generative models for image, video, 3D</b>: 3D pose estimation; Image generation using continuous normalizing flows [1]; Score-based generative models; Video prediction using Neural ODEs [6];</p> <p><b>Unity Technologies, Canada</b> — MITACS Research Intern <span style="float: right;">October 2021 - present</span>          • <i>Team</i>: Deep Pose, Unity Labs; <i>Supervisor</i>: Dr. Boris Oreshkin          • Research on 3D pose estimation from videos</p> <p><b>University of Guelph, Canada</b> — Visiting Researcher with Prof. Graham Taylor <span style="float: right;">Dec 2019 - present</span></p> <p><b>Google, Mountain View, USA</b> — Research Intern <span style="float: right;">Sep-Dec 2019</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;">May 2017 - Aug 2018</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> — CVPR 2022, ACML 2021, NeurIPS 2021, ICCV 2021, CVPR 2021 (<b>Outstanding Reviewer</b>), ICLR 2020, NeurIPS 2020, ICML 2020, NeurIPS 2019, workshops</p> <p><b>Organizer</b> — <b>ICCV 2021</b> - Differentiable 3D Vision and Graphics workshop <span style="float: right;">Oct 2021</span>  <b>OWCV 2021</b> (Canadian Computer Vision workshop), Canada <span style="float: right;">Feb-Apr 2021</span>  <b>GRAPHQUON 2020</b> (Canadian Computer Graphics workshop), Canada <span style="float: right;">Oct-Dec 2020</span></p> <p><b>Blue Lion Labs, Canada</b> — AI Advisor <span style="float: right;">Oct 2020 - present</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;">Sep-Dec 2020</span></p> <p><b>NextAI - Toronto, Canada</b> — AI Scientist in Residence <span style="float: right;">Mar-Sep 2020</span></p> <p><b>IVADO/Mila Deep Learning School, Montreal, Canada</b> — Teaching Assistant <span style="float: right;">Sep 9-13, 2019</span></p> <p><b>NextAI - Montreal, Canada</b> — Scientist in Residence <span style="float: right;">Apr-Sep 2019</span></p> <p><b>Playment, Bengaluru, India</b> — Computer Vision Consultant <span style="float: right;">Jan-Jun 2018</span>          • Worked on semantic segmentation models for autonomous driving</p> <p><b>TalentSprint, Hyderabad, India</b> — Mentor, Foundations of AI &amp; ML (inaugural program) <span style="float: right;">Jan-May 2018</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 - [<a href="#">arXiv</a>]</p> <p>[2] “FairCal : Fairness Calibration for Face Verification”, T. Salvador, S. Cairns, <a href="#">V. Voleti</a>, N. Marshall, A. Oberman - <i>Preprint</i> [<a href="#">arXiv</a>]</p> <p>[3] “Frustratingly Easy Uncertainty Estimation for Distribution Shift”, T. Salvador, <a href="#">V. Voleti</a>, A. Iannantuono, A. Oberman - <i>Preprint</i> [<a href="#">arXiv</a>]</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</i> [<a href="#">arXiv</a>] [<a href="#">OpenReview</a>]</p> <p>[5] “Learning to Combine Top-Down and Bottom-Up Signals in RNNs 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</i> [<a href="#">arXiv</a>]</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</i> [<a href="#">arXiv</a>]</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</i> [<a href="#">pdf</a>]</p>			

AWARDS,  
TALKS &  
OTHER  
EFFORTS

*Dec 2020* - Microsoft Diversity Award for Doctoral Research

- *May 2021* - Outstanding Reviewer at CVPR 2021
- *Apr 2021* - “Training GANs by Solving ODEs” — Mila, Canada [slides]
- *Feb 2021* - “Score-based Generative Models” — Mila, Canada [slides]
- *Sep 2020* - “Continuous Normalizing Flows” — Mila, Canada [slides]
- *Jul 2020* - “GANs: the story so far” — Summer Symposium on AI Research, India [slides] [video]
- *Jul 2020* - “A brief tutorial on Neural ODEs” — Mila, Canada [slides] [video]
- *Apr 2020* - “Mathematics of Neural ODEs” — University of Guelph, Canada [slides]
- *Jan 2020* - “Simple Video Generation using Neural ODEs” — IIIT Hyderabad, India [slides]
- *May 2019* - Tutorial on “GANs” — [AI for Social Good Summer Lab](#), Montreal
- *Jan 2019* - Released code for Self-Attention GAN in PyTorch, converting from TensorFlow code released by Google Brain [GitHub]
- *Oct 2018* - “BigGAN” — Mila, University of Montreal, Canada [slides]
- *Feb 2018* - “Image de-fencing using RGB-D data” — MPI Informatics, Saarbrücken, Germany [slides]
- *Feb 2018* - “Intuition behind LSTMs” at IIIT Hyderabad, India [slides]
- *Nov 2017* - Won the SMS Classification challenge, participated in the Video Action Recognition challenge in the 2017 [Hack2Innovate](#) hackathon in Bangalore, India
- *Aug 2017* - “Mathematics of back-propagation in multi-layer perceptrons” — GreyOrange Robotics, India, and at IIIT-Hyderabad, India [slides]
- *Jul 2017* - Attended summer schools on [Computer Vision](#) and [Machine Learning](#) at IIIT-Hyderabad
  - Stood 3<sup>rd</sup> in Computer Vision Summer School out of 120+ participants, rewarded full fee waiver
  - Stood 4<sup>th</sup> in Machine Learning Summer School out of 120+ participants, rewarded full fee waiver
- *Apr 2009* - 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

*Feb 2016 - May 2017*

- 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

*Jul 2014 - Feb 2016*

- 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

*Supervisor:* Prof. Rajiv Sahay, Electrical Engineering, IIT KHARAGPUR, India

**Master’s thesis** — “De-fencing of Images using RGB-D Data”

*2013 - 2014*

- 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 based on work is published in the proceedings of ICAPR 2015

**Bachelor’s thesis** — “Identification of Bilabial Lip Closures in Audio and Video”

*2012 - 2013*

- Measurement of synchronization between audio and video using bilabial cues in both modes

PAST  
RESEARCH  
INTERSHIPS

**KU Leuven**, Belgium — *Supervisor:* Prof. Ingrid Verbauwhede, ESAT

*Summer 2013*

- Designed arithmetic operations using Carry-Free Logic, simulated circuits in Xilinx

**IIT Kharagpur**, India — *Supervisor:* Prof. Aurobinda Routray, Electrical Engineering

*Summer 2012*

- Made a gesture recognition program in MATLAB using Hidden Markov Models

**Imperial College**, UK — *Supervisor:* Prof. Peter Cheung, Electrical & Electronics

*Summer 2011*

- Measured the relative power consumption among the LookUp Tables (LUTs) of an FPGA

SKILLS

C/C++, CUDA, HTML/CSS, Javascript, Jax, Keras, MATLAB, OpenCV, Python, PyTorch, Tensorflow