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|--|---|--|--------------------------|------------------------|
| 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  | <b>Mila, University of Montreal, Canada</b><br>PhD in Computer Science — <i>Supervisor:</i> Prof. Christopher Pal   | Fall 2018 - present (anticipated 08/2023)<br>(A) 4.0 / 4.3   |                          |                        |
|  | <b>Indian Institute of Technology (IIT), Kharagpur, India</b><br>Dual Degree (B.Tech. (H) + M.Tech.) in Electrical Engineering<br>with Master's specialization in Instrumentation and Signal Processing   | 2009 - 2014<br>8.44 / 10   |                          |                        |
| RESEARCH<br>EXPERIENCE   | <b>Research on generative models for image, video, 3D:</b> Score-based generative models; 3D pose estimation; Image generation using continuous normalizing flows [1]; Video prediction using Neural ODEs [6];<br><b>Unity Technologies, Canada</b> — MITACS Research Intern<br>• Team: Deep Pose, Unity Labs; <i>Supervisor:</i> Dr. Boris Oreshkin<br>• Research on 3D pose estimation from videos<br><b>University of Guelph, Canada</b> — Visiting Researcher with Prof. Graham Taylor<br><b>Google, Mountain View, USA</b> — Research Intern<br>• Team: Google AI Perception, <i>Supervisors:</i> Bryan Seybold, Sourish Chaudhuri<br>• Research on multimodal semi-supervised Active Speaker Detection in videos<br><b>IIIT Hyderabad, India</b> — Research Fellow; <i>Supervisor:</i> Prof. C. V. Jawahar<br>• Synthesized educational videos in regional Indian languages by generating lips from audio<br>• Full paper published at ICASSP 2019 [7], short paper published at CVPR 2018 Workshop   | October 2021 - present<br>Dec 2019 - present<br>Sep-Dec 2019<br>May 2017 - Aug 2018  |                          |                        |
| OTHER<br>EXPERIENCE  | <b>Reviewer</b> — CVPR 2022, ACML 2021, NeurIPS 2021, ICCV 2021, CVPR 2021 ( <i>Outstanding Reviewer</i> ), ICLR 2020, NeurIPS 2020, ICML 2020, NeurIPS 2019, workshops<br><b>Organizer</b> — <b>ICCV 2021</b> - Differentiable 3D Vision and Graphics workshop<br><b>OWCV 2021</b> (Canadian Computer Vision workshop), Canada<br><b>GRAPHQUON 2020</b> (Canadian Computer Graphics workshop), Canada<br><b>Blue Lion Labs, Canada</b> — AI Advisor<br><b>University of Montreal, Montreal, Canada</b> — Teaching Assistant<br>• Fundamentals of Machine Learning (IFT 6390) by Prof. Ioannis Mitliagkas<br><b>NextAI</b> - Toronto, Canada — AI Scientist in Residence<br><b>IVADO/Mila Deep Learning School, Montreal, Canada</b> — Teaching Assistant<br><b>NextAI</b> - Montreal, Canada — Scientist in Residence<br><b>Playment, Bengaluru, India</b> — Computer Vision Consultant<br>• Worked on semantic segmentation models for autonomous driving<br><b>TalentSprint, Hyderabad, India</b> — Mentor, Foundations of AI & ML (inaugural program)<br>• Designed and presented tutorials on machine learning, and mentored industry professionals  | Feb-Oct 2021<br>Feb-Apr 2021<br>Oct-Dec 2020<br>Oct 2020 - present<br>Sep-Dec 2020<br>Mar-Sep 2020<br>Sep 2019<br>Apr-Sep 2019<br>Jan-Jun 2018<br>Jan-May 2018 |                          |                        |
| RESEARCH<br>PAPERS<br>(RECENT)                                     | <div>[1] “Multi-Resolution Continuous Normalizing Flows”, V. Voleti, C. Finlay, A. Oberman, C. Pal - [arXiv]</div> <div>[2] “FairCal : Fairness Calibration for Face Verification”, T. Salvador, S. Cairns, V. Voleti, N. Marshall, A. Oberman - <i>ICLR 2022</i> [arXiv]</div> <div>[3] “gradSim: Differentiable simulation for system identification and visuomotor control” , K. M. Jatavallabhula, M. Macklin, F. Golemo, V. Voleti, 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> [arXiv]</div> <div>[4] “Frustratingly Easy Uncertainty Estimation for Distribution Shift”, T. Salvador, V. Voleti, A. Iannantuono, A. Oberman - <i>Preprint</i> [arXiv]</div> <div>[5] “Learning to Combine Top-Down and Bottom-Up Signals in RNNs with Attention over Modules”, S. Mittal, A. Lamb, A. Goyal, V. Voleti, M. Shanahan, G. Lajoie, M. Mozer, Y. Bengio - <i>ICML 2020</i> [arXiv]</div> <div>[6] “Simple Video Generation using Neural ODEs”, V. Voleti*, D. Kanaa*, S. E. Kahou, C. Pal - <i>NeurIPS 2019 Workshop</i> [arXiv]</div> <div>[7] “Cross-Language Speech Dependent Lip-Synchronization”, V. Voleti*, A. Jha*, V. P. Namboodiri, C. V. Jawahar - <i>ICASSP 2019</i> [pdf]</div> |  |                          |                        |

AWARDS,  
TALKS &  
OTHER  
EFFORTS

*Dec 2020* - Microsoft Diversity Award for Doctoral Research

- *Feb 2022* - “Denoising Diffusion GANs” — Mila, Canada [[slides](#)]
- *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  
INTERNSHIPS

- 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