

VIKRAM VOLETI

ONLINE	Website: voletiv.github.io	GitHub: github.com/voletiv	LinkedIn: Vikram Voleti
CURRENT	PhD student at Mila , with Prof. Christopher Pal		<i>Joined in Fall 2018</i>
EDUCATION	UNIVERSITY OF MONTREAL, Canada		
CURRENT PROJECTS	<ul style="list-style-type: none">• Visual reasoning via language grounding: integrating NLP into GANs for Visual QA• Deep generative models for sculptures in 3D• Text-to-video: audio and video generation from text		
EDUCATION	Dual Degree (B.Tech. (H) + M.Tech.) in Electrical Engineering with Master's specialization in Instrumentation and Signal Processing INDIAN INSTITUTE OF TECHNOLOGY (IIT), KHARAGPUR, India		<i>2009 - 2014</i> CGPA: 8.44 / 10
RESEARCH EXPERIENCE	Research Fellow — <i>Applied Research Lab</i> INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY (IIIT) - HYDERABAD, INDIA <i>Prof. C. V. Jawahar, Centre for Visual Information Technology, IIIT-Hyderabad</i>		<i>May 2017 - August 2018</i>
	PROJECT: Video Translation <ul style="list-style-type: none">• Generated videos of educational tutorials in other languages by generating lips from audio• Short paper published at CVPR Workshop 2018 (FIVER), full paper accepted at ICASSP 2019 PROJECT: Assessor for Lipreader <ul style="list-style-type: none">• Built a visual speech recognizer (lipreader) to classify spoken words by combining CNNs and RNNs• Built an assessor for self-training on unlabelled data, zero-shot learning on out-of-vocabulary words		
RESEARCH PAPERS	<ol style="list-style-type: none">[1] Abhishek Jha*, Vikram Voleti*, Vinay P. Namboodiri, C. V. Jawahar, “Cross-Language Speech Dependent Lip-Synchronization” in ICASSP 2019 (accepted) [pdf][2] Abhishek Jha*, Vikram Voleti*, Vinay P. Namboodiri, C. V. Jawahar, “Lip-Synchronization for Dubbed Instructional Videos” in <i>CVPR Workshop</i>, 2018 (FIVER) [pdf, url][3] V. Voleti, P. Mohan, S. Gupta, J. Iqbal, “Simple Real-Time Pattern Recognition for Industrial Automation,” in <i>Proc. International Conference on Industrial Design Engineering</i>, 2017 [pdf][4] S. Jonna, V. S. Voleti, R. R. Sahay, and M. S. Kankanhalli, “A Multimodal Approach for Image De-fencing and Depth Inpainting,” in <i>Proc. Int. Conf. Advances in Pattern Recognition</i>, 2015, pp. 1—6 [pdf, IEEE]		
OTHER EXPERIENCE	Consultant, Computer Vision — <i>Playment (computer vision startup)</i> <ul style="list-style-type: none">• Worked on semantic segmentation models for autonomous driving Mentor — <i>Foundations of Artificial Intelligence and Machine Learning</i> IIIT HYDERABAD, INDIA — <i>six months certificate program for software professionals</i> <ul style="list-style-type: none">• Designed tutorials and lab sessions on artificial intelligence and machine learning, and mentored industry professionals.		<i>January 2018 - June 2018</i> <i>January 2018 - May 2018</i>
THESIS PROJECTS	“De-fencing of Images using RGB-D Data” — M.Tech. Thesis IIT KHARAGPUR — <i>Prof. Rajiv Sahay, Department of Electrical Engineering</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 [3] based on work is published in the proceedings of ICAPR 2015• Links — GitHub repository containing thesis, presentation, code files, and results “Identification of Bilabial Consonants in Audio and Lip Closures in Video” — B.Tech. Thesis IIT KHARAGPUR — <i>Prof. Rajiv Sahay, Department of Electrical Engineering</i> <ul style="list-style-type: none">• Measurement of synchronization between audio and video using bilabial cues in both modes• Links — GitHub repository containing thesis, presentation, code files, and results		<i>2013 - 2014</i> <i>2012 - 2013</i>

WORK	Image Processing Engineer — <i>Embedded Systems Team</i>	<i>February 2016 - May 2017</i>
EXPERIENCE	GREYORANGE ROBOTICS, INDIA — <i>a multinational firm that designs, manufactures and deploys advanced robotics systems for automation at warehouses, distribution and fulfillment centres</i>	
	<ul style="list-style-type: none"> Developed computer vision module to perform video processing in real time for warehouse automation Experimented with CNNs on GPU for classification of objects on warehouse conveyor belts Developed embedded vision modules in automated guided robots for warehouses Research paper [2] based on work has been accepted at ICIDE 2017, for publication in ACM 	
	Associate Engineer — <i>Avionics Software & Systems Testing Group</i>	<i>July 2014 - February 2016</i>
	AIRBUS, INDIA — <i>a commercial aircraft manufacturer, the largest aeronautics & space company in Europe</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) 	
RESEARCH	“Implementation of Carry-Free Arithmetic Operations in FPGA”	<i>Summer 2013</i>
INTERNSHIPS	KU LEUVEN, BELGIUM — <i>Prof. Ingrid Verbauwhede, Computer Security & Industrial Applications</i>	
	<ul style="list-style-type: none"> Designed arithmetic operations using Carry-Free Logic, simulated circuits in Xilinx Links — GitHub repository containing report, presentation, and related files 	
	“Fingertip Gesture Recognizer using HMMs”	<i>Summer 2012</i>
	IIT KHARAGPUR, INDIA — <i>Prof. Aurobinda Routray, Department of Electrical Engineering</i>	
	<ul style="list-style-type: none"> Implemented Hidden Markov Models (HMMs) in MATLAB, used to recognize shapes drawn by fingertip Links — GitHub repository containing report, presentation, code files, and results 	
	“Measurement of Intra-die Power Variation in Sub-nm FPGA’s”	<i>Summer 2011</i>
	IMPERIAL COLLEGE, LONDON — <i>Prof. Peter Cheung, Head, Electrical and Electronics Engineering</i>	
	<ul style="list-style-type: none"> Measured the relative power consumption among the LookUp Tables (LUTs) of an FPGA Links — GitHub repository containing presentation, certificate, and recommendation letter 	
TECHNICAL	Languages : C, C++, HTML/CSS, Javascript, Python, MATLAB, Shell, Verilog	
SKILLS	Operating Systems: OS X, Ubuntu, Windows	
	Libraries: CUDA, IDS (cameras), Keras, L ^A T _E X, OpenCV, PyTorch, Tensorflow	
SCHOLASTIC	<ul style="list-style-type: none"> Talk: “BigGAN - Large Scale GAN Training for High Fidelity Natural Image Synthesis” [presentation] 	
ACHIEVEMENTS	— at Mila, University of Montréal, Canada	
	<ul style="list-style-type: none"> Talk: “Image de-fencing using RGB-D data” [presentation] — at Max Planck Insitute for Informatics, Saarbrücken, Germany Talk: “Mathematics of back-propagation in multi-layer perceptrons” [link] — at GreyOrange Robotics, India, and at IIIT-Hyderabad Talk: “Intuition behind LSTMs” [presentation] — at IIIT Hyderabad, India 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 Completed <i>additional</i> courses in Computer Science & Engineering at IIT Kharagpur <ul style="list-style-type: none"> Algorithms-I, Artificial Intelligence, Computational Number Theory Participated in Amazon Data Science competition in MVSP 2012, Kaggle competitions, Coursera courses on machine learning, computer vision, neural networks, natural language processing Qualified JEE 2009 by IIT at 99.7 percentile, with All India Rank of 1330 (out of 384,977) 	