

VIKRAM VOLETI

ONLINE	Website: voletiv.github.io	GitHub: github.com/voletiv	LinkedIn: Vikram Voleti
CURRENT EDUCATION	PhD student at Mila , with Prof. Chris Pal	Joined in 2018	
	UNIVERSITY OF MONTREAL, Canada		
CURRENT PROJECTS	<ul style="list-style-type: none">• Building a deep generative model for sculptures in 3D using images rendered in Blender• Visual Reasoning via Language Grounding: integrating NLP into GANs for Visual QA• Basic SLAM using monocular RGB camera on mobile phone		
EDUCATION	Dual Degree (B.Tech. (H) + M.Tech.) in Electrical Engineering with Master's specialization in Instrumentation and Signal Processing	2009 - 2014	
	INDIAN INSTITUTE OF TECHNOLOGY (IIT), KHARAGPUR, India	CGPA: 8.44 / 10	
RESEARCH EXPERIENCE	Research Fellow — <i>Applied Research Lab</i>	May 2017 - August 2018	
	INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY (IIIT) - HYDERABAD, INDIA <i>Prof. C. V. Jawahar, Centre for Visual Information Technology, IIIT-Hyderabad</i>		
	PROJECT: Video Translation <ul style="list-style-type: none">• Generated lip movements in movies and educational tutorials to match speech in other languages• Short paper accepted at CVPR Workshop 2018 (FIVER), full paper submitted to WACV 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		
	Consultant, Computer Vision — <i>Playment (computer vision startup)</i> January 2018 - June 2018 <ul style="list-style-type: none">• Worked on semantic segmentation models for autonomous driving		
	Mentor — <i>Foundations of Artificial Intelligence and Machine Learning</i> January 2018 - May 2018 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.		
RESEARCH PAPERS	<div>[1] 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]</div> <div>[2] 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]</div> <div>[3] 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]</div>		
THESIS PROJECTS	"De-fencing of Images using RGB-D Data" — M.Tech. Thesis IIT KHARAGPUR — <i>Prof. Rajiv Sahay, Department of Electrical Engineering</i>	2013 - 2014	
	<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>	2012 - 2013	
	<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		

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 and implemented addition, subtraction, multiplication using Carry-Free Logic • Developed, tested and verified the modules in Verilog, and 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) 	