

# VIKRAM VOLETI

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ONLINE	Website: <a href="https://voletiv.github.io">voletiv.github.io</a>	GitHub: <a href="https://github.com/voletiv">github.com/voletiv</a>	LinkedIn: <a href="#">Vikram Voleti</a>
CURRENT	<b>PhD student at Mila</b> , with Prof. Chris Pal		<i>Joined in Fall 2018</i>
EDUCATION	UNIVERSITY OF MONTREAL, Canada		
CURRENT PROJECTS	<ul style="list-style-type: none"><li>• Visual reasoning via language grounding: integrating NLP into GANs for Visual QA</li><li>• Deep generative models for sculptures in 3D</li><li>• Text-to-video: audio and video generation from text</li></ul>		
EDUCATION	<b>Dual Degree (B.Tech. (H) + M.Tech.) in Electrical Engineering</b> with Master's specialization in Instrumentation and Signal Processing INDIAN INSTITUTE OF TECHNOLOGY (IIT), KHARAGPUR, India		<i>2009 - 2014</i>  <b>CGPA: 8.44 / 10</b>
RESEARCH EXPERIENCE	<b>Research Fellow</b> — <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>
	<b>PROJECT: Video Translation</b> <ul style="list-style-type: none"><li>• Generated videos of educational tutorials in other languages by generating lips from audio</li><li>• Short paper published at CVPR Workshop 2018 (FIVER), full paper accepted at ICASSP 2019</li></ul> <b>PROJECT: Assessor for Lipreader</b> <ul style="list-style-type: none"><li>• Built a visual speech recognizer (lipreader) to classify spoken words by combining CNNs and RNNs</li><li>• Built an assessor for self-training on unlabelled data, zero-shot learning on out-of-vocabulary words</li></ul>		
RESEARCH PAPERS	<ol style="list-style-type: none"><li>[1] Abhishek Jha*, <a href="#">Vikram Voleti*</a>, Vinay P. Namboodiri, C. V. Jawahar, “Cross-Language Speech Dependent Lip-Synchronization” in ICASSP 2019 (accepted)</li><li>[2] Abhishek Jha*, <a href="#">Vikram Voleti*</a>, Vinay P. Namboodiri, C. V. Jawahar, “Lip-Synchronization for Dubbed Instructional Videos” in <i>CVPR Workshop</i>, 2018 (FIVER) [<a href="#">pdf</a>, <a href="#">url</a>]</li><li>[3] <a href="#">V. Voleti</a>, 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 [<a href="#">pdf</a>]</li><li>[4] S. Jonna, <a href="#">V. S. Voleti</a>, 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 [<a href="#">pdf</a>, <a href="#">IEEE</a>]</li></ol>		
OTHER EXPERIENCE	<b>Consultant, Computer Vision</b> — <i>Playment (computer vision startup)</i> <ul style="list-style-type: none"><li>• Worked on semantic segmentation models for autonomous driving</li></ul> <b>Mentor</b> — <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"><li>• Designed tutorials and lab sessions on artificial intelligence and machine learning, and mentored industry professionals.</li></ul>		<i>January 2018 - June 2018</i>  <i>January 2018 - May 2018</i>
THESIS PROJECTS	<b>“De-fencing of Images using RGB-D Data” — M.Tech. Thesis</b> IIT KHARAGPUR — <i>Prof. Rajiv Sahay, Department of Electrical Engineering</i> <ul style="list-style-type: none"><li>• Elimination of fence-like occlusions, and inpainting of images using RGB-D data</li><li>• Nominated for Best M.Tech. Project Award among three departments (Electrical, Electronics, CS)</li><li>• Research paper [<a href="#">3</a>] based on work is published in the proceedings of ICAPR 2015</li><li>• Links — <a href="#">GitHub repository</a> containing <a href="#">thesis</a>, <a href="#">presentation</a>, code files, and results</li></ul> <b>“Identification of Bilabial Consonants in Audio and Lip Closures in Video” — B.Tech. Thesis</b> IIT KHARAGPUR — <i>Prof. Rajiv Sahay, Department of Electrical Engineering</i> <ul style="list-style-type: none"><li>• Measurement of synchronization between audio and video using bilabial cues in both modes</li><li>• Links — <a href="#">GitHub repository</a> containing <a href="#">thesis</a>, <a href="#">presentation</a>, code files, and results</li></ul>		<i>2013 - 2014</i>  <i>2012 - 2013</i>

WORK	<b>Image Processing Engineer</b> — <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"> <li>• Developed computer vision module to perform video processing in real time for warehouse automation</li> <li>• Experimented with CNNs on GPU for classification of objects on warehouse conveyor belts</li> <li>• Developed embedded vision modules in automated guided robots for warehouses</li> <li>• Research paper [2] based on work has been accepted at ICIDE 2017, for publication in ACM</li> </ul>	
	<b>Associate Engineer</b> — <i>Avionics Software &amp; Systems Testing Group</i>	<i>July 2014 - February 2016</i>
	AIRBUS, INDIA — <i>a commercial aircraft manufacturer, the largest aeronautics &amp; space company in Europe</i>	
	<ul style="list-style-type: none"> <li>• Involved in development and integration of avionics systems for the long-range aircrafts family</li> <li>• Simulated signal-level modifications to the Flight Warning Computer, adopting standard avionics coding guidelines (DO-178B)</li> </ul>	
RESEARCH	<b>“Implementation of Carry-Free Arithmetic Operations in FPGA”</b>	<i>Summer 2013</i>
INTERNSHIPS	KU LEUVEN, BELGIUM — <i>Prof. Ingrid Verbauwhede, Computer Security &amp; Industrial Applications</i>	
	<ul style="list-style-type: none"> <li>• Designed arithmetic operations using Carry-Free Logic, simulated circuits in Xilinx</li> <li>• Links — <a href="#">GitHub repository</a> containing <a href="#">report</a>, <a href="#">presentation</a>, and related files</li> </ul>	
	<b>“Fingertip Gesture Recognizer using HMMs”</b>	<i>Summer 2012</i>
	IIT KHARAGPUR, INDIA — <i>Prof. Aurobinda Routray, Department of Electrical Engineering</i>	
	<ul style="list-style-type: none"> <li>• Implemented Hidden Markov Models (HMMs) in MATLAB, used to recognize shapes drawn by fingertip</li> <li>• Links — <a href="#">GitHub repository</a> containing <a href="#">report</a>, <a href="#">presentation</a>, code files, and results</li> </ul>	
	<b>“Measurement of Intra-die Power Variation in Sub-nm FPGA’s”</b>	<i>Summer 2011</i>
	IMPERIAL COLLEGE, LONDON — <i>Prof. Peter Cheung, Head, Electrical and Electronics Engineering</i>	
	<ul style="list-style-type: none"> <li>• Measured the relative power consumption among the LookUp Tables (LUTs) of an FPGA</li> <li>• Links — <a href="#">GitHub repository</a> containing <a href="#">presentation</a>, certificate, and recommendation letter</li> </ul>	
TECHNICAL	<b>Languages :</b> C, C++, HTML/CSS, Javascript, Python, MATLAB, Shell, Verilog	
SKILLS	<b>Operating Systems:</b> OS X, Ubuntu, Windows	
	<b>Libraries:</b> CUDA, IDS (cameras), Keras, L <sup>A</sup> T <sub>E</sub> X, OpenCV, PyTorch, Tensorflow	
SCHOLASTIC	<ul style="list-style-type: none"> <li>• Talk: “BigGAN - Large Scale GAN Training for High Fidelity Natural Image Synthesis” <a href="#">[presentation]</a></li> </ul>	
ACHIEVEMENTS	— at Mila, University of Montréal, Canada	
	<ul style="list-style-type: none"> <li>• Talk: “Image de-fencing using RGB-D data” <a href="#">[presentation]</a> — at Max Planck Institute for Informatics, Saarbrücken, Germany</li> <li>• Talk: “Mathematics of back-propagation in multi-layer perceptrons” <a href="#">[link]</a> — at GreyOrange Robotics, India, and at IIIT-Hyderabad</li> <li>• Talk: “Intuition behind LSTMs” <a href="#">[presentation]</a> — at IIIT Hyderabad, India</li> <li>• Attended summer schools on <a href="#">Computer Vision</a> and <a href="#">Machine Learning</a> at IIIT-Hyderabad in 2017 <ul style="list-style-type: none"> <li>– Stood 3<sup>rd</sup> in Computer Vision Summer School out of 120+ participants, rewarded full fee waiver</li> <li>– Stood 4<sup>th</sup> in Machine Learning Summer School out of 120+ participants, rewarded full fee waiver</li> </ul> </li> <li>• Won the SMS Classification challenge, participated in the Video Action Recognition challenge in the 2017 <a href="#">Hack2Innovate</a> hackathon in Bangalore, India</li> <li>• Completed <i>additional</i> courses in Computer Science &amp; Engineering at IIT Kharagpur <ul style="list-style-type: none"> <li>– Algorithms-I, Artificial Intelligence, Computational Number Theory</li> </ul> </li> <li>• Participated in Amazon Data Science competition in MVSP 2012, Kaggle competitions, Coursera courses on machine learning, computer vision, neural networks, natural language processing</li> <li>• Qualified JEE 2009 by IIT at 99.7 percentile, with All India Rank of 1330 (out of 384,977)</li> </ul>	