

# Ragav Venkatesan

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CONTACT	Email: <a href="mailto:ragav.venkatesan@gmail.com">ragav.venkatesan@gmail.com</a>				
LINKS	<a href="#">LinkedIn</a>	<a href="#">Homepage</a>	<a href="#">Google Scholar</a>	<a href="#">GitHub</a>	<a href="#">Amazon Books</a>
SUMMARY	Senior Software Engineer with over 7 years industry-leading experience in building enterprise-level, cost-efficient distributed machine learning and computer vision platforms and a breadth of research areas spanning from infrastructure such as MLOps, data governance and management, inference APIs to cutting-edge techniques such as generative AI, object detection, semantic-segmentation, domain adaptation. video-enhancement, generative animation, multiple-instance learning, and neural-network compression.				
PROFESSIONAL EXPERIENCE	(E1) NVIDIA				
	(N1) <i>Senior Software Engineer - <a href="#">Maxine</a> and <a href="#">Broadcast</a></i>		August 2021 – Present		
	<ul style="list-style-type: none"><li>AI-based video-enhancement features (webcam-denoising, artifact-reduction).</li><li>Generative AI-based image animation (eye-contact, live-portrait) models.</li><li>Migrated Maxine and Broadcast workloads to <a href="#">Maglev</a> .</li></ul>				
	(E2) Amazon				
	(A1) <i>Applied Scientist - Amazon Alexa AI</i>		November 2019 – August 2021		
	(A2) <i>Applied Scientist - Amazon Web Services, AI Labs</i>		May 2019 – November 2019		
	(A3) <i>Research Scientist - Amazon Web Services, Sagemaker</i>		November 2017 – May 2019		
	<ul style="list-style-type: none"><li>Migrated Alexa AI workloads to AWS sagemaker platform.</li><li><a href="#">Shipped ENAS for Alexa voice training.</a></li><li><a href="#">Open source launch of Amazon SageMaker Reinforcement Learning.</a></li><li><a href="#">Launched Amazon SageMaker Object Detection Algorithms.</a></li><li><a href="#">Launched Amazon SageMaker Semantic Segmentation Algorithms.</a></li><li><a href="#">Launched Bring your own Tensorflow and MXNet models to SageMaker.</a></li><li><a href="#">Open source launched Neural Network Compression using AWS SageMaker RL.</a></li></ul>				
	(E3) <i>Research Assistant - Arizona State University.</i>		August 2011 – October 2017		
	<ul style="list-style-type: none"><li><a href="#">The Diabetic Retinopathy project</a>      Funding Agency: National Institutes of Health.</li><li><a href="#">The MIDAS project</a>      Funding Agency: National Science Foundation.</li></ul>				
EDUCATION	(E4) <i>Researcher Intern - Intel</i>		December 2013 – August 2014		
	<ul style="list-style-type: none"><li>Built vehicle and lane detection for automated driver assistance systems applications.</li></ul>				
	<b>Doctor of Philosophy</b> - Computer Science		October 2017		
	Advisor: <a href="#">Professor Baoxin Li</a> Arizona State University, Tempe, Arizona, USA				
	<b>Master of Science</b> - Electrical Engineering		August 2012		
Advisor: <a href="#">Professor David Frakes</a> Arizona State University, Tempe, Arizona, USA					
<b>Bachelor of Engineering</b> - Electronics and Communication Engineering		June 2010			
Anna University, Chennai, Tamil Nadu, India					
BOOKS	(B1) <b>Ragav Venkatesan</b> , Baoxin Li, “ <a href="#">Convolutional Neural Networks in Visual Computing: A Concise Guide</a> ”, CRC Press, a Tyler & Francis company, 2017.				
	<b>Ragav Venkatesan</b> , Baoxin Li, “ <a href="#">卷积神经网络与视觉计算</a> ”, 机械工业出版社, 2019.				

- BOOK CHAPTERS (Bc1) Xiang Xu, Xiong Zhou, **Ragav Venkatesan**, Gurumurthy Swaminathan, Orchid Majumdar, “*d-SNE: Domain Adaptation using Stochastic Neighborhood Embedding*.” in *Domain Adaptation in Computer Vision With Deep Learning*, edited by Hemanth Venkateswara, Sethuraman Panchanathan, in *Springer Nature*, 2020.
- (Bc2) Parag Chandakkar, **Ragav Venkatesan**, Baoxin Li, “Feature Extraction and Learning for Visual Data” in “*Feature Engineering for Machine Learning and Data Analytics*”, *CRC Press, a Tyler & Francis company*, 2017.

SELECTED  
PEER-REVIEWED  
CONFERENCES

- (C1) Ansel MacLaughlin, Jwala Dhamala, Anoop Kumar, Sriram Venkatapathy, **Ragav Venkatesan**, Rahul Gupta, “*Evaluating the Effectiveness of Efficient Neural Architecture Search for Sentence-Pair Tasks*.”, in *Workshop on Insights from Negative Results in NLP at the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2020. [ORAL]
- (C2) Xiang Xu, Xiong Zhou, **Ragav Venkatesan**, Gurumurthy Swaminathan, Orchid Majumdar “*d-SNE: Domain Adaptation using Stochastic Neighborhood Embedding*.”, in *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Long Beach, California, USA, 2019. [ORAL]
- (C3) **Ragav Venkatesan**, Jaya Vijetha Gattupalli, Baoxin Li, “*On the generality of neural image features*.”, in *IEEE International Conference on Image Processing (ICIP)*, Phoenix, Arizona, USA, 2016. [ORAL]
- (C4) **Ragav Venkatesan**, Parag Shridhar Chandakkar, Baoxin Li, “*Simpler non-parametric methods provide as good or better results to multiple-instance learning*.”, in *IEEE International Conference on Computer Vision (ICCV)*, Santiago, Chile 2015. [Spotlight]
- (C5) **Ragav Venkatesan**, Parag Shridhar Chandakkar, Baoxin Li, “*Video-Based Self-Positioning for Intelligent Transport Systems Applications*”, in *the Tenth International Symposium on Visual Computing (ISVC)*, Las Vegas, Nevada, USA, 2015. [ORAL]
- (C6) **Ragav Venkatesan**, Christine Zwart, David Frakes, Baoxin Li, “*Perception-Inspired Spatio-Temporal Video Deinterlacing*”, in *the Eighth International Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM)*, Tempe, Arizona, USA, 2014. [ORAL]
- (C7) Parag Shridhar Chandakkar\*, **Ragav Venkatesan\***, Baoxin Li, Helen Li, “*Retrieving clinically relevant diabetic retinopathy images using a multi-class multiple-instance framework*”, in *proceedings of SPIE conference on Medical Imaging, International Society of Opticals and Photonics*, Orlando, Florida, USA, 2013. [ORAL]
- (C8) **Ragav Venkatesan\***, Parag Shridhar Chandakkar\*, Baoxin Li, Helen Li, “*Classification of Diabetic Retinopathy Images Using Multi-Class Multiple-Instance Learning Based on Color Correlogram Features*”, in *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society 2012 (EMBC’12)*, San Diego, California, USA, 2012. [Poster]
- (C9) **Ragav Venkatesan\***, Parag Shridhar Chandakkar\*, Baoxin Li, Helen Li, “*Clinically Relevant Diabetic Retinopathy Image Retrieval Using a Multi-Class Multiple Instance Framework*”, in *proceedings of ACM conference on Bio-informatics, Computational Biology and Biomedicine (ACM-BCB’12)*. Orlando, Florida 2012. [ORAL]
- (C10) **Ragav Venkatesan**, Christine Zwart, David Frakes, “*Video Deinterlacing with Control Grid Interpolation Frameworks*”, in *Proceedings of the IEEE International Conference on Image Processing (ICIP)*, Orlando, Florida, USA, 2012. [Poster]
- \* - Equal contribution from authors.

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PEER-REVIEWED  
JOURNALS

- (J1) Parag Shridhar Chandakkar, **Ragav Venkatesan**, Baoxin Li, “*MIRank-KNN: Multiple Instance Retrieval of Clinically-Relevant Diabetic Retinopathy Image*”, in *SPIE Journal of Medical Imaging*, 2017.
- (J2) **Ragav Venkatesan**, Christine Zwart, David Frakes, Baoxin Li “*Spatio-temporal Video Deinterlacing using Control Grid Interpolation*”, in *SPIE Journal of Electronic Imaging*, 24(2), 023022. 2015.
- (J3) Christine Zwart, **Ragav Venkatesan**, David Frakes, “*Decomposed Multidimensional Control Grid Interpolation for Common Interpolation-Based Image Processing Applications in Consumer Electronics*”, in *SPIE Journal of Electronic Imaging*, vol. 24, no.4, pp.43012-1 to 43012-12. 2012.

SELECTED ARXIV AND LONGFORM	(A1) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Xiong Zhou, Anna Luo, “Out-of-the-box channel pruned networks.”, <a href="#">arXiv: 2004.14584</a> 2020.
	(A2) <b>Ragav Venkatesan</b> , Hemanth Venkateshwara, Sethuraman Panchanathan, Baoxin Li., “A strategy for an uncompromising incremental learner.”, <a href="#">arXiv: 1705.00744</a> 2017.
	(A3) <b>Ragav Venkatesan</b> , Vijetha Gattupalli, Baoxin Li., “Neural Dataset Generality.”, <a href="#">arXiv: 1605.04369</a> 2016.
	(A4) <b>Ragav Venkatesan</b> , Baoxin Li., “Diving deeper into mentee networks.”, <a href="#">arXiv: 1604.08220</a> 2016.
	(A5) Lydia Manikonda, <b>Ragav Venkatesan</b> , Subbarao Kambhampati, and Baoxin Li., “Evolution of fashion brands on Twitter and Instagram.”, <a href="#">arXiv: 1512.01174</a> 2015.
DISSERTATION	(R1) <b>Doctoral dissertation</b> <i>Novel image features and learning techniques.</i> October 2017
	(R2) <b>Masters thesis</b> <i>Video Deinterlacing using Control Grid Interpolation Frameworks.</i> August 2012
	(R3) <b>Undergraduate thesis</b> <i>A comparative study of detection of faults and estimation of distance to faults on wired communication channels, using TDR and FDR techniques.</i> May 2010
ISSUED PATENTS	(P1) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Vineet Khare, Bharathan Balaji, Saurabh Gupta, Leo Parker Dirac, Sahika Genc “ <a href="#">Decoupled machine learning training.</a> ” US11861490B1
	(P2) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Xiong Zhou, Anna Luo, Vineet Khare “ <a href="#">Applying compression profiles across similar neural network architectures.</a> ” US11809992B1
	(P3) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Xiong Zhou, Anna Luo, Vineet Khare “ <a href="#">Searching compression profiles for trained neural networks.</a> ” US11755603B1
	(P4) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Xiong Zhou, Anna Luo, Vineet Khare “ <a href="#">Reinforcement learning for training compression policies for machine learning models.</a> ” US11501173B1
	(P5) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, “ <a href="#">Domain mapping for privacy preservation.</a> ” US10567334B1
TEACHING EXPERIENCE	(T1) <i>Instructor - Amazon Machine Learning University.</i> Convolutional Neural Networks (2018 - 2019)
	(T2) <i>Instructor - Arizona State University.</i> CSE 591: Introduction to deep learning for visual computing (January - May 2017)
	(T3) <i>Co-instructor - Arizona State University.</i> CSE 509: Digital Video Processing (August 2015 - December 2015)
	(T4) <i>Teaching Assistant - Arizona State University.</i> <ul style="list-style-type: none"> <li>• CSE 575: Statistical Machine Learning <ul style="list-style-type: none"> <li>– Dr. Jingrui He (January 2015 - May 2015)</li> </ul> </li> <li>• CSE 569: Fundamentals of Statistical Learning <ul style="list-style-type: none"> <li>– Dr. Baoxin Li (August 2014 - December 2014 and August 2016 - December 2016)</li> </ul> </li> <li>• CSE 509: Digital Video Processing <ul style="list-style-type: none"> <li>– Dr. David Claveau (August 2012 - December 2012)</li> <li>– Dr. Hari Sundaram (August 2013 - December 2013)</li> </ul> </li> <li>• CSE 424, 485 and 486: Capstone Projects (January 2013 - May 2013)</li> </ul>
	(T5) <i>Guest Lectures - Arizona State University.</i> Duties in this position involve providing specific lectures in courses on invitation. <ul style="list-style-type: none"> <li>• CSE 569: Hidden Markov Models (September 2017)</li> <li>• CSE 569: Neural Networks (October - November 2017)</li> </ul>
REFERENCES	Will be provided on request.