

Ragav Venkatesan

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CONTACT	Email: ragav.venkatesan@gmail.com Mobile: 480-414-1164				
LINKS	LinkedIn	Homepage	Google Scholar	GitHub	Amazon Books
SUMMARY	Senior Software Engineer with experience in building enterprise-level, cost-efficient distributed machine learning and computer vision platforms and a breadth of research areas spanning multiple-instance learning, object detection, domain adaptation and neural network compression.				
PROFESSIONAL EXPERIENCE	<p>(E1) Nvidia AI</p> <p>(N1) <i>Senior Software Engineer - Nvidia Maxine AI Platform</i> August 2021 – Present</p> <p>(E2) Amazon</p> <p>(A1) <i>Applied Scientist - Amazon Alexa AI</i> November 2019 – August 2021</p> <p>(A2) <i>Applied Scientist - Amazon Web Services, AI Labs</i> May 2019 – November 2019</p> <p>(A3) <i>Research Scientist - Amazon Web Services, Sagemaker</i> November 2017 – May 2019</p> <p><i>Publicly Available Artifacts:</i></p> <ul style="list-style-type: none">• Open Source: Amazon SageMaker Reinforcement Learning.• Launch Announcement: Amazon SageMaker Object Detection Algorithms.• Launch Announcement: Amazon SageMaker Semantic Segmentation Algorithms.• Launch Announcement: Bring your own Tensorflow and MXNet models to SageMaker.• Open Source: Neural Network Compression using AWS SageMaker RL. <p>(E3) <i>Research Assistant - Arizona State University.</i> August 2011 – October 2017</p> <ul style="list-style-type: none">• The Diabetic Retinopathy project Funding Agency: National Institutes of Health.• The MIDAS project Funding Agency: National Science Foundation. <p>(E4) <i>Researcher Intern - Intel</i> December 2013 – August 2014</p> <ul style="list-style-type: none">• Built vehicle and lane detection for automated driver assistance systems applications.				
EDUCATION	<p>Doctor of Philosophy - Computer Science October 2017 Advisor: Professor Baoxin Li Arizona State University, Tempe, Arizona, USA</p> <p>Master of Science - Electrical Engineering August 2012 Advisor: Professor David Frakes Arizona State University, Tempe, Arizona, USA</p> <p>Bachelor of Engineering - Electronics and Communication Engineering June 2010 Anna University, Chennai, Tamil Nadu, India</p>				
BOOKS	<p>(B1) Ragav Venkatesan, Baoxin Li, “ Convolutional Neural Networks in Visual Computing: A Concise Guide ”, CRC Press, a Tyler & Francis company, 2017.</p> <p>Ragav Venkatesan, Baoxin Li, “ 卷积神经网络与视觉计算 ”, 机械工业出版社, 2019.</p>				
BOOK CHAPTERS	<p>(Bc1) Xiang Xu, Xiong Zhou, Ragav Venkatesan, Gurumurthy Swaminathan, Orchid Majumdar, “ d-SNE: Domain Adaptation using Stochastic Neighborhood Embedding. ” in <i>Domain Adaptation in Computer Vision With Deep Learning</i>, edited by Hemanth Venkateswara, Sethuraman Panchanathan, in <i>Springer Nature</i>, 2020.</p> <p>(Bc2) Parag Chandakkar, Ragav Venkatesan, Baoxin Li, “Feature Extraction and Learning for Visual Data” in “ Feature Engineering for Machine Learning and Data Analytics , <i>CRC Press, a Tyler & Francis company</i>, 2017.</p>				

- (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.

- (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.

- (A1) **Ragav Venkatesan**, Gurumurthy Swaminathan, Xiong Zhou, Anna Luo, “Out-of-the-box channel pruned networks.”, [arXiv: 2004.14584](#) 2020.
- (A2) **Ragav Venkatesan**, Hemanth Venkateshwara, Sethuraman Panchanathan, Baoxin Li., “A strategy for an uncompromising incremental learner.”, [arXiv: 1705.00744](#) 2017.
- (A3) **Ragav Venkatesan**, Vijetha Gattupalli, Baoxin Li., “Neural Dataset Generality.”, [arXiv: 1605.04369](#) 2016.
- (A4) **Ragav Venkatesan**, Baoxin Li., “Diving deeper into mentee networks.”, [arXiv: 1604.08220](#) 2016.
- (A5) Lydia Manikonda, **Ragav Venkatesan**, Subbarao Kambhampati, and Baoxin Li., “Evolution of fashion brands on Twitter and Instagram.”, [arXiv: 1512.01174](#) 2015.

DISSERTATION	(R1) Doctoral dissertation <i>Novel image features and learning techniques.</i>	October 2017
	(R2) Masters thesis <i>Video Deinterlacing using Control Grid Interpolation Frameworks.</i>	August 2012
	(R3) Undergraduate thesis <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) Ragav Venkatesan , Gurumurthy Swaminathan, “ <i>Domain mapping for privacy preservation.</i> ” 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"> • CSE 575: Statistical Machine Learning <ul style="list-style-type: none"> – Dr. Jingrui He (January 2015 - May 2015) • CSE 569: Fundamentals of Statistical Learning <ul style="list-style-type: none"> – Dr. Baoxin Li (August 2014 - December 2014 and August 2016 - December 2016) • CSE 509: Digital Video Processing <ul style="list-style-type: none"> – Dr. David Claveau (August 2012 - December 2012) – Dr. Hari Sundaram (August 2013 - December 2013) • CSE 424, 485 and 486: Capstone Projects (January 2013 - May 2013) 	
	(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"> • CSE 569: Hidden Markov Models (September 2017) • CSE 569: Neural Networks (October - November 2017) 	
REFERENCES	Will be provided on request.	