

# Ragav Venkatesan

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LINKS      [LinkedIn](#)      [Homepage](#)      [Google Scholar](#)      [GitHub](#)      [Amazon Books](#)

SUMMARY      Principal Engineer with a decade of experience in delivering enterprise and consumer-grade, computer vision products and a breadth of R&D experience spanning from infrastructure such as MLops, data governance and management, inference APIs to cutting-edge learning techniques such as generative AI, object detection, semantic-segmentation, domain adaptation. video-enhancement, generative animation, multiple-instance learning, distillation and neural-network compression.

PROFESSIONAL EXPERIENCE      (E1) NVIDIA  
(N1) *Principal Engineer - [Maxine](#) and [Broadcast](#)*      March 2025 – Present  
(N2) *Senior Software Engineer - [Maxine](#)*      August 2021 – March 2025

- Maxine NVIDIA Inference Microservices (NIMs) and APIs.
- AI-based video-enhancement features (webcam-denoising, artifact-reduction).
- Generative AI-based image animation (eye-contact, live-portrait, audio2face2d, studio voice) models.

(E2) Amazon

(A1) *Applied Scientist - Amazon Alexa AI*      November 2019 – August 2021  
(A2) *Applied Scientist - Amazon Web Services, AI Labs*      May 2019 – November 2019  
(A3) *Research Scientist - Amazon Web Services, Sagemaker*      November 2017 – May 2019

- Migrated Alexa AI workloads to AWS sagemaker platform.
- [Shipped ENAS for Alexa voice training.](#)
- [Open source launch of Amazon SageMaker Reinforcement Learning.](#)
- [Launched Amazon SageMaker Object Detection Algorithms.](#)
- [Launched Amazon SageMaker Semantic Segmentation Algorithms.](#)
- [Launched Bring your own Tensorflow and MXNet models to SageMaker.](#)
- [Open source launched Neural Network Compression using AWS SageMaker RL.](#)

(E3) *Research Assistant - Arizona State University.*      August 2011 – October 2017

- [The Diabetic Retinopathy project](#)      Funding Agency: National Institutes of Health.
- [The MIDAS project](#)      Funding Agency: National Science Foundation.

(E4) *Researcher Intern - Intel*      December 2013 – August 2014  
• Built vehicle and lane detection for automated driver assistance systems applications.

EDUCATION      **Doctor of Philosophy** - Computer Science      October 2017  
Advisor: [Professor Baoxin Li](#)  
Arizona State University, Tempe, Arizona, USA

**Master of Science** - Electrical Engineering      August 2012  
Advisor: [Professor David Frakes](#)  
Arizona State University, Tempe, Arizona, USA

**Bachelor of Engineering** - Electronics and Communication Engineering      June 2010  
Anna University, Chennai, Tamil Nadu, India

BOOKS      (B1) **Ragav Venkatesan**, Baoxin Li, “ [Convolutional Neural Networks in Visual Computing: A Concise Guide](#) ”, CRC Press, a Tyler & Francis company, 2017.  
**Ragav Venkatesan**, Baoxin Li, “ [卷积神经网络与视觉计算](#) ”, 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.

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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 Optical 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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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> , Xiong Zhou, Gurumurthy Swaminathan, Fedor Zhadnov ” US12277192
	(P2) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Vineet Khare, Bharathan Balaji, Saurabh Gupta, Leo Parker Dirac, Sahika Genc “ <a href="#">Decoupled machine learning training.</a> ” US11861490
	(P3) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Xiong Zhou, Anna Luo, Vineet Khare “ <a href="#">Applying compression profiles across similar neural network architectures.</a> ” US11809992
	(P4) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, Xiong Zhou, Anna Luo, Vineet Khare “ <a href="#">Searching compression profiles for trained neural networks.</a> ” US11755603
	(P5) <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> ” US11501173
	(P6) <b>Ragav Venkatesan</b> , Gurumurthy Swaminathan, “ <a href="#">Domain mapping for privacy preservation.</a> ” US10567334
SELECTED TALKS AND LECTURES	(L1) <b>Creating 2D Digital Humans</b> , - 2025. <i>NVIDIA GTC.</i>
	(L2) <b>Microsoft Cloud + AI, Redmond, Washington</b> , - 2020. <i>ML problems and solutions at an enterprise scale.</i>
	(L3) <b>Facebook Reality Labs, Redmond, Washington</b> , - 2020. <i>ML problems and solutions at an enterprise scale.</i>
	(L4) <b>IEEE Conference on Computer Vision and Pattern Recognition</b> , - 2019. <i>Domain Adaptation using Stochastic Neighborhood Embedding.</i>
	(L5) <b>Microsoft Research, Redmond, Washington</b> , - 2019. <i>Common Image Dataset Issues and Solutions.</i>
	(L6) <b>Amazon A9 Computer Vision Conference</b> , - 2019. <i>Workshop on Amazon SageMaker.</i>
	(L7) <b>ASU International Students Graduate Orientation</b> , - 2017. <i>Professional Networking for Graduate Students.</i>
	(L8) <b>Qualcomm</b> , San Diego, California, - 2017. <i>Tools for Measuring Image Generality in Datasets.</i>
	(L9) <b>Siemens</b> , Princeton, New Jersey, - 2017. <i>Measuring Dataeset-level Image Generality.</i>
	(L10) <b>International Conference on Image Processing</b> , Phoenix, Arizona - 2016. <i>Neural Dataset Generality.</i>
	(L11) <b>International Workshop on Video Processing and Quality Metrics for Consumer Electronics</b> , Chandler, Arizona, USA - 2014. <i>Perception-Inspired Spatio-Temporal Video Deinterlacing.</i>
	(L12) <b>SPIE conference on Medical Imaging</b> , Orlando, Florida, USA - 2013. <i>Retrieving clinically relevant diabetic retinopathy images using a multi-class multiple instance framework.</i>