Subarna Tripathi

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Research Experience

Jun 2013 – present **Graduate Research Assistant**, UC San Diego.
My research interests include discriminative and generative models for applications such as object detection, semantic and instance segmentation.

Professional Experiences

Sept 2016– to Dec 2016 **Research Intern**, Qualcomm Multimedia R&D , San Diego, USA.
A low-complexity Object-Detection model using Deep CNN with TensorFlow-Slim

Jun 2016– to Sept 2016 **Research Intern**, Google Research and Machine Intelligence, Seattle, USA.
Person instances segmentation using Deep CNN with TF-Slim.

Jun 2015 – Sept 2015 **Research Intern**, Microsoft Research, Redmond, USA.
A novel self-calibrating eye tracking for head mounted virtual reality systems.

May 2006 – Oct 2012 **Technical Leader**, STMicroelectronics, Noida and Bangalore, India.
Computer Vision, Machine Learning, Video Compression, Computational Photography research projects in the Advanced System Technology (AST) group.

Jul 2005 – May 2006 **Member of Technical Staff**, Interra Systems, Noida, India.
I implemented TraceViewer, MP4/3GPP analyzer for Interra's *Vega* Video Analyzer.

Education

2013–present **PhD Candidate, Computer Vision**, *University of California San Diego*, USA.
Advisors Professor Truong Nguyen and Professor Serge Belongie

2007–2011 **MS Research, Electrical Engineering**, *Indian Institute of Technology, Delhi*, India.

2001–2005 **BTech, Computer Science and Engineering**, *West Bengal University of Technology*, India.

Skill Set

Topics Computer Vision, Object Detection and Segmentation, Machine Learning, Generative and Discriminative Models, Deep Learning

Languages C, Python, MATLAB

Libraries TensorFlow, Theano, OpenCV

Selected Publications

Papers [8] **A Statistical Approach to Continuous Self-Calibrating Eye Gaze Tracking for Head-Mounted Virtual Reality Systems**, ***S. Tripathi***, *and B. Guenter*, WACV 2017, (**The Best Paper Award**).

[7] **Pose2Instance: Harnessing Keypoints for Person Instance Segmentation**, ***S. Tripathi***, *M. Collins, M. Brown, and S. Belongie*, currently under review.

[6] **Low-Complexity Object Detection with Deep Convolutional Neural Network for Embedded System**, ***S. Tripathi***, *B. Kang, G. Dane and T. Nguyen*, To appear in SPIE 2017.

[5] **Context Matters : Refining Object Detection in Video with Recurrent Neural Networks**, ***S. Tripathi***, *Z. Lipton, S. Belongie, and T. Nguyen*, BMVC, 2016.

[4] **Detecting Temporally Consistent Objects in Videos through Object Class Label Propagation**, ***S. Tripathi***, *S. Belongie, Y. Hwang, and T. Nguyen*, WACV, 2016.

[3] **Semantic Video Segmentation : Exploring Inference Efficiency**, ***S. Tripathi***, *S. Belongie, Y. Hwang, and T. Nguyen*, IEEE ISOCC, 2015.

[2] **Real-time Sign Language Fingerspelling Recognition using Convolutional Neural Networks from Depth map**, *B. Kang,* ***S. Tripathi****, and T. Nguyen*, ACPR, 2015.

[1] **Improving Streaming Video Segmentation with Early and Mid-Level Visual Processing**, ***S. Tripathi****, Y. Hwang, S. Belongie, and T. Nguyen*, WACV, 2014.

Workshops [4] **Precise Recovery of Latent Vectors from Generative Adversarial Networks**, *Z.C. Lipton, and* ***S. Tripathi***, ICLR Workshop 2017.

[3] **Continuous Self-Calibrating Eye Gaze Tracking for Virtual Reality Systems**, ***S. Tripathi****, and B. Guenter*, CVPR workshop WiCV, 2017.

[2] **Context Matters : Refining Object Detection in Video with Recurrent Neural Networks**, ***S. Tripathi****, Z. Lipton, S. Belongie, and T. Nguyen*, WiML, collocated with NIPS, Barcelona, 2016.

[1] **Beyond Semantic Image Segmentation : Exploring Efficient Inference in Video**, ***S. Tripathi****, S. Belongie, and T. Nguyen*, CVPR Workshop WiCV, Boston, 2015.

Patents [3] **GOP-Independent Dynamic Transcoder Bitrate Controller**, ***S. Tripathi****, and E. Piccinelli*, US patent, US 8913658 B2.

[2] **A Method and System for Determining A Macroblock Partition For Data Transcoding**, ***S. Tripathi****, K. Saha and E. Piccinelli*, US patent, US 9197903 B2.

[1] **Method for Detecting a Straight Line in a Digital Image**, *L. Magri, B. Rossi,* ***S. Tripathi****, P. Fragneto and E. Piccinelli*, US patent, US 9245200 B2.

Book Chapter **Animation and Flash Overview**, *Computer Graphics Multimedia and Animation*, Dr. Malay Pakhira, Prentice Hall of India.

Co-curricular and Extra-curricular Activities

Scholarship **National Scholarship of Merit**, 1999, 2001, India.

Awards **Google Grace Hopper Celebration Award, Women in Machine Learning travel scholarship**, 2016.

Mentoring **Undergrad Students**, *TCS-best project award for YUV sequence Viewer*, 2007.

Reviewer **SIGGRAPH, IEEE HMS**, *Other International conferences.*

Courses **Computer Vision, Machine Learning, Pattern Recognition, Image Processing**.

Websites

Patents **All patents**.

Publications **http://acsweb.ucsd.edu/ stripath/research/publication.html**.

SE(3) Group `https://vision.cornell.edu/se3/people/subarna-tripathi/`.

Linkedin `https://www.linkedin.com/in/subarnatripathi`.

Github `https://github.com/subarnatripathi`.

Homepage `http://acsweb.ucsd.edu/~stripath/research/`.

Languages

English, Bengali, Hindi