

# MADAN RAVI GANESH

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## Research Interests

Neural Network Pruning, Curriculum Learning, Application of Information Theoretic Measures, Computer Vision and Machine Learning

## WORK EXPERIENCE

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### National Instruments Intern

Bangalore, IND  
January 2013 - June 2013

- *Supervisor*: Praveen Madabushi
- *Responsibilities*: Automation of product quality analysis and inference of features susceptible to bugs.

### National Instruments Software Engineer

Bangalore, IND  
2013-2014

- *Supervisor*: Praveen Madabushi
- *Responsibilities*: Testing RFSA-GUIs and management of members across multiple teams and time zones.

### University of Michigan Graduate Student Research Assistant

Ann Arbor, MI  
2015 - Present

- *Advisors*: Dr. Jason J. Corso and Dr. Salimeh Yasaei Sekeh
- *Primary Focus*: Neural network pruning, curriculum learning, application of information theoretic measures and video-based deep learning.

## EDUCATION

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### University of Michigan Ph.D., Computer Vision

Ann Arbor, MI  
Expected April 2022

*Advisors*: Dr. Jason J. Corso and Dr. Salimeh Yasaei Sekeh

*Courses*: Advanced Computer Vision, Machine Learning, and Image Processing

### M.S.R. Institute of Technology B.E., Electronics and Communications

Bangalore, IND  
June 2013

*Courses*: Data Structures, Signal Processing, and Embedded Software Coding

## PUBLICATIONS

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- **Ravi Ganesh, M.**, Corso, J.J. and Sekeh, S.Y., “Slimming Neural Networks Using Adaptive Connectivity Scores”. [Paper Code](#) (*Under Review*).
- **Ravi Ganesh, M.**, Corso, J.J. and Sekeh, S.Y., “MINT: Deep Network Compression via Mutual Information-based Neuron Trimming”, ICPR 2020. [Paper Code](#).
- **Ravi Ganesh, M.** and Corso, J.J., “Rethinking Curriculum Learning with Incremental Labels and Adaptive Compensation”, BMVC 2020. [Paper Code](#).

- **Ravi Ganesh, M.**, Hofesmann, E., Min, B., Gafoor, N. and Corso, J.J., “T-RECS: Training for Rate-Invariant Embeddings by Controlling Speed for Action Recognition”, Available on arXiv. [Paper](#) [Code](#).
- Ding, W., **Ravi Ganesh, M.**, Severinghaus, R.N., Corso, J.J. and Panagou, D., “Real-time model predictive control for keeping a quadrotor visible on the camera field-of-view of a ground robot”, ACC 2016. [Paper](#).
- Kumar, S., Dhiman, V., **Ravi Ganesh, M.** and Corso, J.J., “Spatiotemporal articulated models for dynamic SLAM”, Available on arXiv. [Paper](#).
- **Ravi Ganesh, M.**, Krishna, R., Manikantan, K. and Ramachandran, S., “Entropy based binary particle swarm optimization and classification for ear detection”, Engineering Applications of Artificial Intelligence, Volume 27, 2014. [Paper](#).
- Chandan, B., Sadhu, C., **Ravi Ganesh, M.**, and Sanket, N.J., “Novel approach to lane and path detection in unmanned ground vehicles”, ICATE 2013. [Paper](#).

## SOFTWARE DEVELOPMENT

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- ViP: Video Platform for PyTorch [Code](#) [Paper](#) (Stars: 175)
- M-PACT: Michigan Platform for Activity Classification in Tensorflow [Code](#) [Paper](#) (Stars: 85)

## PROFICIENCIES AND SKILLS

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<b>Languages</b>	English (Proficient), Tamil (Native), Hindi (Fluent), Kannada (Fluent)
<b>Computer Languages</b>	C++ (basics), MATLAB, LabVIEW and Python
<b>Deep Learning</b>	Caffe, Tensorflow, PyTorch and Theano
<b>Software &amp; Tools</b>	LaTeX, Excel and Arduino

## ACHIEVEMENTS AND PROFESSIONAL ACTIVITIES

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**Winner** of 1<sup>st</sup> prize for implementation and presentation of paper titled: ‘Decoupled Active Contours for Boundary Extraction’ and its extension to color images.

**Winner** of 3<sup>rd</sup> prize at the University of Michigans Engineering Research Symposium 2021, in the Advanced Graduate Student Research session.

**Reviewer** ECCV 2020, BMVC 2020, ICML 2018, CVPR 2018, Mathematical Problems in Engineering.

**Volunteer** at “Xplore Engineering summer camp” and technical symposium held at National Instruments, “NIBTech”.

## REFERENCES

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**Jason J. Corso** jcorso@stevens.edu  
 Director, Stevens Institute of Artificial Intelligence, Stevens Institute of Technology, Hoboken, NJ.

**Salimeh Yasaei Sekeh** salimeh.yasaei@maine.edu  
 Assistant Professor, School of Computing and Information Science, University of Maine, Orono, ME.