

# Sudarshan Babu | CV

✉ sudarshan@ttic.edu – 🌐 Website

## Research Interests

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- 3D Computational Biology
- Meta-Learning
- 3D Generation, Segmentation, Reconstruction
- Learning with limited samples

## Education

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**Toyota Technological Institute at University of Chicago** **Oct 2019 – Present**  
*PhD., Computer Science, Advisor: Prof. Michael Maire, CGPA: 3.90/4.0*

**Toyota Technological Institute at University of Chicago** **Oct 2017 – Oct 2019**  
*MS., Computer Science, CGPA: 3.83/4.0*

## Publications

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**3D Mesh Feature Fields: Lifting SAM on to Meshes** **To be Submitted**  
*Fei et al.*

**HyperFields: Towards Zero-Shot Generation of NeRFs from Texts** **Under Review**  
*Babu et al.*

**Online Meta-Learning via Learning with Layer-Distributed Memory** **NeurIPS 2021**  
*Babu et al.*

**Domain-independent Dominance of Adaptive Methods** **CVPR 2021**  
*Savarese et al.*

**HyperNetwork Designs for Improved Classification and Robust Meta-Learning**  
*Babu et al.*

## Patents

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**Method and System for Efficient Clustering of Combined Numeric and Qualitative Data Records**  
*Saurabh Agarwal, Aravindakshan Babu, Sudarshan Babu, Hariharan Chandrasekaran*  
US Patent No. 10,747,785, issued Aug 18, 2020.  
US Patent No. 10,846,311, issued Nov 24, 2020.

## Current Research Projects

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**HyperSegmentationFields: Towards Zero-shot Generation of Segmentation Fields**  
*3D Segmentation; HyperNetworks for generating segmentation fields*

**Controllable Novel-View Synthesis via Hyper Codes**  
*Controlled semi generative 3D model via learnt latent codes; HyperNetworks map codes to NeRFs*

## Industry Experience

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**Amazon** **Oct 2021 – January 2022**  
*Research Scientist Intern*  
Learning Efficient Curriculum for Training Neural Networks

**Nvidia** **Feb 2021 – June 2021**  
*Research Scientist Intern*  
Designing systems to train non-stationary long tail distributions

**Mad Street Den** **Feb 2016 – Mar 2017**  
*Data Engineer*  
Recommendation Engines, Product Similarity for Online Catalogs, etc.

## Relevant Coursework

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- Statistical Machine Learning (**A**)
- Topics in Deep Learning (**A**)
- Matrix Computations (**A<sup>-</sup>**)
- Natural Language Processing (**A**)
- Speech and Learning Technologies (**A**)
- Algorithms (**A<sup>-</sup>**)

## Services

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- Reviewer: CVPR, ICCV
- Teaching Assistant: Machine Learning; instructor Prof.Greg Shakhnarovich
- Co-organizer of Annual TTI-C Student Workshop
- Co-organizer of vision reading group

*Fall 2020*  
*Feb 2020*  
*Oct 2020 – Present*

## Skills

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- **Programming Languages:** Python; Matlab; C++;  $\text{\LaTeX}$
- **Packages:** PyTorch; PySpark; Scikit; WandB; PuDB