

# Siddarth Asokan

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ACADEMIC BACKGROUND	<b><i>Doctor of Philosophy (Ph.D.)</i></b>	2017 – (2023)
	( <i>Thesis Submitted: May 10th, 2023</i> ) <a href="#">Robert Bosch Center for Cyber-Physical Systems (RBCCPS)</a> <a href="#">Indian Institute of Science (IISc.)</a> , Bengaluru	<u>GPA: 9.80/10</u>
	<ul style="list-style-type: none"><li>⊙ <b>Thesis Title:</b> On the Optimality of Generative Adversarial Networks — A Variational Perspective</li><li>⊙ <b>Areas of research:</b> Generative modeling, Generative adversarial networks, Langevin diffusion models, High-dimensional Interpolation, Variational Calculus, Fourier analysis</li><li>⊙ Will be awarded Masters of Technology (M. Tech.) (Research) Degree along with Ph.D. Degree.</li><li>⊙ <b>Supervisor:</b> <a href="#">Prof. Chandra Sekhar Seelamantula</a></li><li>⊙ <b>Selected coursework:</b> Linear and Non-linear Optimization, Image Processing, Pattern Recognition, Reinforcement Learning, Autonomous Navigation, Stochastic Approximation Algorithms</li></ul>	
	<b><i>Bachelor of Engineering (B.E.)</i></b>	2013 – 2017
	( <i>Electronics and Communication Engineering</i> ) <a href="#">M. S. Ramaiah Institute of Technology (MSRIT)</a> , Bengaluru,	<u>GPA: 9.98/10</u>
	<ul style="list-style-type: none"><li>⊙ <b>Rank:</b> University 1st Rank, Gold Medal</li><li>⊙ <b>Project Title:</b> Smart Parking and Surveillance</li><li>⊙ <b>Selected coursework:</b> Linear Algebra, Probability Theory, Numerical Methods, Signals and Systems, Digital Signal Processing, Information Theory, Image Processing</li></ul>	
INTERNSHIP	<b><i>B.E. Project Intern</i></b>	2016 – 2017
	<a href="#">Robert Bosch Center for Cyber-Physical Systems</a> , IISc. Bangalore	
	<ul style="list-style-type: none"><li>⊙ <b>Project Title:</b> Image Processing and Networking for Smart City Applications</li><li>⊙ <b>Supervisors:</b> <a href="#">Prof. Bharadwaj Amrutur</a> and <a href="#">Dr. Abhay Sharma</a></li></ul>	
ACCOLADES	<b><i>Fellowships</i></b>	
	⊙ Winner – Qualcomm Innovation Fellowship (All India Competitive)	2022
	⊙ Winner – RBCCPS Ph.D. Fellowship (Institute Competitive)	2021
	⊙ Winner – Qualcomm Innovation Fellowship (All India Competitive)	2021
	⊙ Winner – RBCCPS Ph.D. Fellowship (Institute Competitive)	2020
	⊙ Finalist – Qualcomm Innovation Fellowship (All India Competitive)	2020
	⊙ Winner – Qualcomm Innovation Fellowship (All India Competitive)	2019
	⊙ Winner – Microsoft Research (MSR) Ph.D. Fellowship (Institute Selective)	2018

## Awards

- ⊙ Best Presenter – 14th IISc EECS Symposium – AI/ML Track 2023
- ⊙ Gold Medal – B.E. (Highest Cumulative GPA - MSRIT, Class of 2017) 2017
- ⊙ Runners up – Best Project ( MSRIT, Class of 2017) 2017
- ⊙ Runners up – Ideathon (IISc – MSRIT Symposium on Smart Cities) 2017
- ⊙ College 2nd Rank – [M.E.S. Pre-university College](#) (State 10th Rank) 2013
- ⊙ School 1st Rank – [Poorna Prajna Education Center](#) (State 11th Rank) 2011

## SKILLS

### Programming Languages and Libraries

- ⊙ Python: *NumPy*, *SciPy*, *TensorFlow (1.0 and 2.0)*, *Keras*, *PyTorch*,
- ⊙ Others: C, C++, MATLAB

### Documentation

- ⊙  $\text{\LaTeX}$
- ⊙ Markdown

## PUBLICATIONS *Journal Publications*

[GOOGLE SCHOLAR](#)

2. **S. Asokan** and C. S. Seelamantula, “Data Interpolants – That’s What Discriminators in Higher-order Gradient-regularized GANs Are”, *under review at the Transactions on Machine Learning Research (TMLR)*.
1. **S. Asokan** and C. S. Seelamantula, “Euler-Lagrange Analysis of Generative Adversarial Networks”, *Journal of Machine Learning Research (JMLR)*, 1–100, 2023

### Conference Articles

6. **S. Asokan**, N. Shetty, A.Srikanth and C. S. Seelamantula, “GANs Settle Scores!”, *under review In Advances in Neural Information Processing Systems (NeurIPS) 2023*
5. **S. Asokan** and C. S. Seelamantula, “Spider GAN: Leveraging Friendly Neighbors to Accelerate GAN Training”, *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023*, Vancouver, Canada ([Link](#))
4. **S. Asokan**, F. S. Mohammed and C. S. Seelamantula, “A Game of Snakes and GANs”, *In Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2023*, Rhodes Island, Greece (**Oral Presentation**) ([Link](#))
3. **S. Asokan** and C. S. Seelamantula, “LSGANs with gradient regularizers are smooth high-dimensional interpolators”, *In Proceedings on “INTERPOLATE: First Workshop on Interpolation and Beyond” at NeurIPS Workshops 2022*, New Orleans, United States of America ([Link](#))
2. **S. Asokan** and C. S. Seelamantula, “Bridging the Gap Between Coulomb GAN and Gradient-regularized WGAN”, *In Proceedings on “The Symbiosis of Deep Learning and Differential Equations (DLDE) - II” at NeurIPS Workshops 2022*, New Orleans, United States of America (**Spotlight Presentation**) ([Link](#))
1. **S. Asokan** and C. S. Seelamantula, “Teaching a GAN What Not to Learn”, *In Advances in Neural Information Processing Systems (NeurIPS) 2020*, Vancouver, Canada ([Link](#))

**PROFESSIONAL *Invited Talks***  
**ACTIVITIES**

1. **S. Asokan** and C. S. Seelamantula, “Teaching a GAN What Not to Learn”, *The ACM India Joint International Conference on Data Science and Management of Data (CODS-COMAD), Premier Paper Track, 2021*

***Refereed Publications***

- ⊙ International Conference on Machine Learning (ICML) 2021 – present
- ⊙ Advances in Neural Information Processing Systems (NeurIPS) 2021 – present
- ⊙ Intl. Conf. on Acoustics, Speech, Signal Processing (ICASSP) 2021 – present
- ⊙ International Conference on Image Processing. (ICIP) 2019, 2020

**TEACHING**

***Teaching Assistant at IISc.***

- ⊙ E9-241 – Digital Image Processing August-December 2019
- ⊙ E9-241(O) – Digital Image Processing (Online) August-December 2022

**REFEREES**

- ⊙ *Prof. Chandra Sekhar Seelamantula*  
Professor, Department of Electrical Engineering, IISc.  
`css@iisc.ac.in`
- ⊙ *Prof. Bharadwaj Amrutur*  
Chair, Robert Bosch Center for Cyber-Physical Systems, IISc.  
Professor, Department of Electrical Communication Engineering, IISc.  
`amrutur@iisc.ac.in`