SREYAS MOHAN

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EDUCATION

- **New York University** — New York City, USA
  Ph.D. candidate at the **Center for Data Science**; **CGPA**: 4.0/4.0 — Sept 2017 - May 2022
  - Advised by Prof. Carlos Fernandez-Granda and Prof. Eero P Simoncelli
  - Key Courses: *Mathematics of Deep Learning, Deep Learning, Inference and Representation, Optimization Based Data Analysis, Natural Language Processing With Representation Learning*

- **Indian Institute of Technology Madras** — Chennai, India
  B.Tech in Electrical Engineering; **CGPA**: 9.02/10 — Aug 2013 – Jul 2017
  - Key Courses: *Machine Learning, Reinforcement Learning, Machine Learning for Computer Vision, Probability, Statistics and Stochastic Processes, Applied Linear Algebra for EE, Digital Signal Processing*

PUBLICATIONS & PREPRINTS

∗ *equal contribution*

[1] **Adaptive Denoising via GainTuning** [ArXiv]
Sreyas Mohan, J. Vincent, R. Monzorro, P. Crozier, C. Fernandez-Granda, E. P. Simoncelli. *Proc. 35th Conference on Neural Information Processing Systems (**NeurIPS**), 2021.*

[2] **Deep Unsupervised Video Denoising** [ArXiv]
D. Sheth*, **S. Mohan***, J. Vincent, R. Monzorro, P. Crozier, M. Khapra, E. Simoncelli, C. Fernandez-Granda. *Proc. of the IEEE International Conference on Computer Vision (**ICCV**), 2021.*

[3] **Developing and Evaluating Deep Neural Network-based Denoising for Nanoparticle TEM Images with Ultra-low Signal-to-Noise** [ArXiv]
J. Vincent, R. Monzorro, **Sreyas Mohan**, B. Tang, D. Sheth, E. Simoncelli, D. Matteson, C. Fernandez-Granda, P. Crozier. ***Microscopy and Microanalysis**, 27(S1), 262-264, 2021.*

[4] **Perturbation CheckLists for Evaluating NLG Evaluation Metrics** [ArXiv]
A. B. Sai, T. Dixit, D. Sheth, **Sreyas Mohan**, M. Khapra. *Empirical Methods in Natural Language Processing (**EMNLP**) 2021.*

[5] **Deep Denoising for Scientific Discovery: A Case Study in Electron Microscopy** [ArXiv]
Sreyas Mohan, R. Monzorro, J. Vincent, B. Tang, D. Sheth, E. Simoncelli, D. Matteson, P. Crozier, C. Fernandez-Granda. *Preprint (2020)*

[6] **Be Like Water: Robustness to Extraneous Variables Via Adaptive Feature Normalization** [ArXiv]
A. Kaku*, **Sreyas Mohan***, A. Parnandi, H. Schambra, C. Fernandez-Granda. *Preprint (2020)*

[7] **Robust and Interpretable Blind Image Denoising via Bias-free Convolutional Neural Networks** [ArXiv]
Sreyas Mohan*, Zahra Kadkhodaie*, Eero Simoncelli and Carlos Fernandez-Granda. *Proc. International Conference on Learning Representations (**ICLR**), 2020*

[8] **Data-driven Estimation of Sinusoid Frequencies** [ArXiv]
Gautier Izacard, **Sreyas Mohan**, Carlos Fernandez-Granda. *Proc. 33rd Conference on Neural Information Processing Systems (**NeurIPS**), Vancouver (Canada) 2019.*

[9] **Automatic Knee Segmentation using Diffusion Weighted MRI** [ArXiv]
A Duarte*, C Hegde*, A Kaku*, **S Mohan***, J G. Raya. *Medical Imaging Meets NeurIPS, Neural Information Processing Systems (**NeurIPS**), Vancouver (Canada) 2019.*

[10] **Blind Nonnegative Source Separation Using Biological Neural Networks** [ArXiv]
Cengiz Pehlevan, **Sreyas Mohan**, Dmitri Chklovskii. ***Neural Computation**, vol. 29, no. 11, pp. 29252954, 2017, and **Cosyne 2017**, Salt Lake City, USA.*

[11] **Data Driven Coded Aperture Design for Depth Recovery** [ArXiv]
*Prasan Shedligeri, **Sreyas Mohan**, Kaushik Mitra. IEEE International Conference on Image Processing **ICIP**, pp. 56-60, 2017*

PROFESSIONAL EXPERIENCE

Research Intern
- *Google Inc.* May – Aug 2021
  Hosts: Dr. Aamir Anis, Dr. Yeping Su
  Deep learning based pre-processing to improve audio compression at low bitrates.

Visiting Researcher
- *Institute of Science and Technology, Austria* May – July 2017
  Advisor: Dr. Gasper Tkacik
  Reconstructing a complex movie from the activations of ganglion cells in a mammalian retina.

Strategy Researcher
- *Trexquant Investment LP, Stamford, USA* Jan – April 2017
  Worked remotely from India.
  Designed and implemented machine-learning algorithms to filter and assign weights to thousands of proprietary return forecasts of stocks in Trexquant's database.

Research Intern
- *Simons Center for Data Analysis/Flatiron Institute, New York* May – Aug 2016
  Advisors: Dr. Dmitri Chklovskii, Dr. Cengiz Pehlevan
  Proposed a biologically plausible two-layer neural network that learns to separate mixtures of non-negative sources to its components.

Data Science Intern
- *Lighthouse Datalab, Mumbai, India* May – Jul 2015
  Targeted Advertising. Mentored by Dr. Sriram Subramnian. [REPORT]

Computer Vision Intern
- *HyperVerge, Chennai, India* May – Jul 2014
  Detecting Fire and Smoke from low-resolution CCTV Camera Feeds.

SCHOLASTIC ACHIEVEMENTS

- Awarded *Subramanian Rajalakshmi Indira (SRI)* Prize for the **Best Interdisciplinary Project** across all students in the graduating batch of 2017 at IIT Madras.
- Awarded DAAD WISE Scholarship by **Goverment of Germany** in 2016. (Declined)
- Awarded **KVPY**(Kishore Vaigyanik Protsahan Yojana)[1] scholarship (2011) . (All India Rank 166)
- Travel Grant: NeurIPS (2019, 2020) Cosyne 2017,
- One among **70 students** selected **nationwide** for NIUS [2] Fellowship in 2013.

TEACHING EXPERIENCE

At New York University:
- *DS-GA 1013 Mathematical Tools for Data Science* (Spring 2020, 2021) for Prof. Carlos Fernandez-Granda
- *DS-GA 1002 Probability and Statistics* (Fall 2020) for Prof. Carlos Fernandez-Granda and Prof. Brett Bernstein
- *DS-GA 1011 Natural Language Processing with Representation Learning* (Fall 2019) for Prof. Kyunghyun Cho
- *DS-GA 1003 Machine Learning* (Spring 2019) for Prof. Julia Kempe and Dr. David Rosenberg.

Elsewhere:
- **Kigali, Rwanda**: NLP with Deep Learning at the African Institute of Mathematical Sciences, Rwanda. (March 2019, 2020). For Prof. Kyunghyun Cho
- **IIT Madras, India**: *EE5177 Machine Learning for Computer Vision* (Spring 2017) for Prof. Kaushik Mitra
- **Chennai, India**: IViL[3] - Physics and Mathematics for underprivileged high school students (2013-2017)

SERVICE

Reviewer for ICLR (2020, 2021), NeurIPS (2020, 2021), ICML (2021), CVPR (2020), and Journal of Electronic Imaging (JEI)

[1] Translated as Young Scientist Encouragement Program. KVPY
[2] NIUS is instituted by HBCSE(Tata Institute for Fundamental Research) Bombay
[3] IIT for Villages-student run organisation with the vision of helping rural India develop by leveraging the resource base at IITM