

# Curriculum Vitae

## Parthe Pandit

Postdoctoral Researcher, Halicioğlu Data Science Institute, UC San Diego

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## Research Interests

(i) Interpolation via neural networks and kernels (ii) Implicit regularization in deep learning, (iii) Dynamics of non-smooth non-convex optimization algorithms.

## Education

**University of California, Los Angeles** 2016-2021  
- Ph.D., Electrical and Computer Engineering  
- M.S., Statistics

**Indian Institute of Technology, Bombay** 2010-15  
- M. Tech., Electrical Engineering (Communication and Signal Processing)  
- B. Tech., Electrical Engineering (Minor in Computer Science and Engineering)

## Awards and Achievements

HDSI-Simons Postdoctoral Fellowship, Halicioğlu Data Science Institute (UC San Diego) 2021  
Jack K. Wolf Student Paper Award, *ISIT* 2019  
Guru Krupa Foundation Fellowship (UCLA) 2019  
J. N. Tata Endowment award 2019  
J. N. Tata Endowment Fellowship 2016  
K. C. Mahindra Fellowship 2016  
Junior Research Fellowship, *IIT Bombay* 2015  
Academic Excellence Award, *EE Department, IIT Bombay* 2014  
Merit Scholarship, *CBSE, Government of India* 2010-14  
Indian National Mathematics and Physics Olympiad (top 300 in India) 2010

## Research Experience

Halicioğlu Data Science Institute, UC San Diego (Postdoctoral Researcher) 2022-present  
Dept. of Statistics, UC Los Angeles (Graduate Student Researcher) 2016-2021  
Citadel LLC. (Quantitative Researcher), New York City Jun-Aug 2021  
Amazon AWS AI (Applied Scientist II), Palo Alto Jun-Aug 2020  
Amazon Search (Applied Scientist II), Palo Alto Mar-May 2020  
Sustainable LA Grand Challenge, UCLA Mar-Sept 2017  
IIT Bombay, Systems and Controls group Aug 2015-Aug 2016  
Centre of Optics, Photonics and Lasers, Quebec City, Canada May-Jul 2013  
IIT Bombay Racing Team (Manufacturing HV battery for electric vehicle) 2012

## Publications

[Google Scholar page](#). (T: Thesis, J: Journal, C: Conference)

- T1. (2021) “Exact Analysis of Inverse Problems in High Dimensions with Applications to Machine Learning”. Ph.D. in Electrical and Computer Engineering, UCLA. Committee: Alyson K. Fletcher, Sundeep Rangan, Arash A. Amini, Jonathan C. Kao, Abeer Alwan
- T2. (2021) “Non-asymptotic Analysis of Learning Long-range Autoregressive Generalized Linear Models for Discrete High-dimensional Data”. M.S. in Statistics, UCLA. Committee: Alyson K. Fletcher, Arash A. Amini, Lin Yang
- T3. (2015) “Speaker Diarization of Broadcast News Audios”. M.Tech. in Electrical Engineering, IIT Bombay. Committee: Preeti Rao, Bikash Kumar Dey, Sunil Kumar Koppurapu, Sudha Shastri.
  
- J1. (2021) Pandit, Sahraee-Ardakan, Rangan, Schniter, Fletcher. “Matrix Inference and Estimation in Multi-layer Models.” *Journal of Statistical Mechanics: Theory and Experiment*
- J2. (2020) Pandit, Sahraee-Ardakan, Amini, Rangan, Fletcher. “Generalized Autoregressive Linear Models for Discrete High-dimensional Data.” *IEEE Journal on Selected Areas in Information Theory*, special issue on Statistical Estimation and Inference
- J3. (2020) Pandit, Sahraee-Ardakan, Rangan, Schniter, Fletcher. “Inference with Deep Generative Priors in High Dimensions.” *IEEE Journal on Selected Areas in Information Theory*, special issue on Deep Learning: Mathematical foundations and applications to Information science
- J4. (2019) Fletcher, Pandit, Rangan, Sarkar, Schniter. “Plug in estimation in high dimensional linear inverse problems a rigorous analysis.” *Journal of Statistical Mechanics: Theory and Experiment*
- J5. (2018) Pandit, Kulkarni. “Refinement of the equilibrium of public goods games over networks: Efficiency and effort of specialized equilibria.” *Journal of Mathematical Economics*
- J6. (2018) \_\_\_\_\_. “A linear complementarity based characterization of the weighted independence number and the independent domination number in graphs.” *Discrete Applied Mathematics*
  
- C1. (2021) Emami, Sahraee-Ardakan, Pandit, Rangan, Fletcher. “Implicit Bias of Linear RNNs.” *ICML*
- C2. (2020) \_\_\_\_\_. “Generalization Error of Generalized Linear Models in High Dimensions.” *ICML*
- C3. (2020) Pandit, Sahraee-Ardakan, Rangan, Schniter, Fletcher. “Matrix Inference and Estimation in Multi-layer Models.” *NeurIPS*
- C4. (2019) Pandit, Sahraee-Ardakan, Rangan, Fletcher. “Asymptotics of MAP inference in Deep Networks.” *ISIT (Winner of Jack K. Wolf Student Paper award.)*
- C5. (2019) \_\_\_\_\_. “High-Dimensional Analysis of Learning in Two-Layer Models.” *DeepMath*
- C6. (2019) Pandit, Sahraee-Ardakan, Amini, Rangan, Fletcher. “Sparse Multivariate Bernoulli Processes in High Dimensions.” *AISTATS*
- C7. (2018) Fletcher, Pandit, Rangan, Sarkar, Schniter. “Plug-in estimation in high-dimensional linear inverse problems: A rigorous analysis.” *NeurIPS*
- C8. (2018) Pandit, Coogan. “Discount-based Pricing and Capacity Planning for EV Charging under Stochastic Demand.” *American Controls Conference*
- C9. (2018) Emami, Sahraee-Ardakan, Pandit, Fletcher, Rangan, Trumpis, Bent, Chiang, Viventi. “Low-Rank Nonlinear Decoding of  $\mu$ -ECoG from the Primary Auditory Cortex.” *Conference on Cognitive Computational Neuroscience*
- C10. (2017) Pandit, Kulkarni, “Non-constructive lower bounds for binary asymmetric error correcting codes.” *IEEE National Conference on Communications*
- C11. (2015) Verma, Vinutha, Pandit, Rao. “Structural segmentation of hindustani concert audio with posterior features.” *IEEE ICASSP*

## Invited Talks

2022: UCSD Theory Seminar

2021: UBC

UC Los Angeles, CS dept.: Big Data and ML Seminar

UC Berkeley, Statistics

Lawrence Berkeley National Lab

UC Berkeley: BASiCS Seminar

2020: IIT Bombay, EE dept.

University of Utah, Center For Data Science: Data Science Seminar

UC Santa Barbara, ECE dept.

Amazon Web Services, Palo Alto, CA

Amazon Search, Palo Alto, CA

2019: International Symposium on Information Theory, Paris

Amazon Web Services, Pasadena, CA

UCLA Math Seminar

2018: American Controls Conference, Milwaukee, WI

UCLA Math Seminar

2016: SoCal Symposium on Network Economics and Game Theory, Los Angeles

Indira Gandhi Institute of Development Research, Mumbai

IIT Bombay, EE dept.

## Teaching Assistantships

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|---|--------------------|
| 1. Introduction to Pattern Recognition and Machine Learning (Stats, UCLA) | <i>Spring 2021</i> |
| 2. Principles of Feedback Control Systems (ECE, UCLA)                     | <i>Spring 2018</i> |
| 3. Signals and Systems (EE, IIT Bombay)                                   | <i>Spring 2015</i> |
| 4. Speech Processing (EE, IIT Bombay)                                     | <i>Fall 2014</i>   |
| 5. Calculus (Maths, IIT Bombay)   | <i>Fall 2013</i>   |
| 6. Partial Differential Equations (Maths, IIT Bombay)                     | <i>Fall 2012</i>   |

## Reviewing

2022: AISTATS, ICLR, ICRA, Omega Journal of Management Science, IEEE Transactions on Information Theory

2021: NeurIPS, ICML, AISTATS, IEEE ISIT, Omega Journal of Management Science, IEEE Transactions on Information Theory, KDD workshop on Responsible AI

2020: NeurIPS, ICML, AAI, IEEE Transactions on Signal Processing, IEEE ISIT

2019: NeurIPS, ICML

2018: IEEE NCC, IConSIP

Updated as of January 31, 2022. A more recent version can be accessed [parthe.github.io](https://parthe.github.io).