Senanayak Sesh Kumar Karri

RESEARCH NAME	K. S. Sesh Kumar

CONTACT INFORMATION

Data Science Institute
Imperial College London.

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HOMEPAGE seshkumar.github.io

ACADEMIC POSITIONS

Imperial College London.

Assistant Supervisor, (May 2018 - Present).

Data Science Institute, Imperial College London.

Research Fellow, (Sept 2019 - Present).

Statistical machine learning group, Imperial College London.

Research Fellow, (Dec 2017 - Aug 2019).

Kolmogorov group, IST Austria.

Post-Doctoral Research, (Oct 2016 - Oct 2017).

EDUCATION

SIERRA, École Normale Supérieure/INRIA, Paris, FRANCE.

Doctoral Student, (May 2013 - Sept 2016).
- Advisor : Prof. Francis Bach.

École Normale Supérieure, Cachan, FRANCE.

Masters Student, (Sept 2012- Apr 2013)
- Advisor : Prof. Francis Bach.

International Institute of Information Technology, Hyderabad, INDIA.

B.Tech, Computer Science, August 2003.
- Advisor : Prof. C. V. Jawahar.

ACADEMIC/WORK EXPERIENCE

WILLOW - project team, INRIA, Paris, FRANCE.

Research Engineer   **September 2012 - April 2013**
- Face detection/recognition algorithms.

Mentors: Dr. Ivan Laptev, Dr. Josef Sivic.

SIERRA - project team, INRIA, Paris, FRANCE.

Internship   **January, 2012 - August, 2012**
- Convex relaxations for learning bounded treewidth decomposable graphs.

Mentors: Prof. Francis Bach.

Computer Vision and Geometry Group, ETH, Zurich, SWITZERLAND.

Internship   **April, 2011 - August, 2011**
- Real Time 3D Reconstruction on a cluster of GPUs.

Mentors: Dr. Luca Ballan.

Telecom Sud Paris, Evry, FRANCE.

Research Engineer   **February, 2010 - March, 2011**

- GPUCV, MediaGPU.

Mentors: Prof. Patrick Horain.

International Institute of Information Technology, Hyderabad, INDIA.

Research Assistant   **April, 2003 - May, 2006**

- Indian Language OCRs, Document Segmentation.

Mentors: Prof. C. V. Jawahar.

TEACHING	**Spring 2020**
	Machine Learning, MSc Health Data Analytics, Imperial College London.
	Autumn 2018
	Mathematics for Machine Learning, Computing Dept, Imperial College London.

SUPERVISION
- Co-supervise 2 PhD students with Prof. Marc Deisenroth.
- Supervise(d) 6 masters students.
- Supervised a group project of 5 masters students.

REVIEWING
- International Conference on Machine Learning (2017, 2018, 2019, 2021)
- Neural Information Processing Systems.(2017, 2019)
- International Conference on Artificial Intelligence and Statistics.(2018, 2020)
- International Conference on Learning Representation.(2019, 2020)
- IEEE Transactions on Pattern Analysis and Machine Intelligence

WORKSHOPS
- Organizer of Imperial @ NeurIPS 2019 workshop.

OTHER ACADEMIC ACTIVITES
- Organizer of Machine Learning Tutorials at Imperial College London.
- Core Member of Machine Learning Initiative at Imperial College London.

AWARDS AND FELLOWSHIPS
- 2019 - Research Fellowship by Data Science Institute at Imperial College London.
- 2018 - Research Fellowship by Leverhulme Centre for the future of Intelligence.
- 2017 - Data Science Institute funding at Imperial College London, 20000 GBP.

INVITED TALKS
- Facebook AI Research, May 2020.
- Research Seminar, UCL Centre for AI, January 2020.
- Imperial @ NeurIPS 2019, Imperial College London, UK, November 2019.
- CSML Seminar, UCL London, UK. January, 2019.
- Leverhulme Centre for Future of Intelligence, Cambridge, UK. July 2018.
- Imperial College London, UK. July 2017.
- EPFL, Switzerland. June 2016.
- TU Munich, Germany. May 2016.
- IST Vienna, Austria. April 2016.
- Microsoft Research, India. October 2015.

PROFESSIONAL EXPERIENCE

AMD Research and Development India Pvt. Ltd., Hyderabad, INDIA.
GPGPU Engineer   **June, 2006 - January, 2010**

Publications   1) Michelangelo Conserva, Marc P. Deisenroth and K. S. Sesh Kumar, "Submodular Kernels for Efficient Rankings", *In arXiv:2105.12356, 2021.*

2) Samuel Cohen, K. S. Sesh Kumar and Marc P. Deisenroth, "Sliced Multi-Marginal-Monge Optimal Transport", *In arXiv:2102.07115, 2021.*

3) Riccardo Moriconi, Marc P. Deisenroth and K. S. Sesh Kumar, "High-Dimensional Bayesian Optimization with Manifold Gaussian Processes", *Machine Learning, 2020.*

4) K. S. Sesh Kumar, F. Bach and T. Pock, "Fast Decomposable Submodular Function Minimization using Constrained Total Variation". *In Neural Information Processing Systems, 2019.*

5) Riccardo Moriconi, K. S. Sesh Kumar and Marc P. Deisenroth, "High-dimensional Bayesian optimization with projections using quantile Gaussian processes", *Optimization Letters, 2019.*

6) K. S. Sesh Kumar and Marc P. Deisenroth, "Differentially Private Empirical Risk Minimization with Sparsity-Inducing Norms", *In Privacy Preserving Machine Learning (PPML), 2018.*

7) K. S. Sesh Kumar and F. Bach, "Active-set Methods for Submodular Minimisation Problems". *In Journal for Machine Learning Research, 2017.*

8) K. S. Sesh Kumar and F. Bach, "Maximizing submodular functions using probabilistic graphical models". *In workshop on Discrete Optimization for Machine Learning (DISCML-NIPS), 2013.*

9) K. S. Sesh Kumar and F. Bach, "Convex Relaxation for Learning Bounded Treewidth Decomposable Graphs". *In Proceedings of International Conference on Machine Learning (ICML), 2013.*

10) D. A. Gómez Járegui, P. Horain, M. K. Rajagopal and K. S. Sesh Kumar, Real-Time Particle Filtering with Heuristics for 3D Motion Capture by Monocular Vision, *In Proceedings of IEEE International Workshop on Multimedia Signal Processing (MMSP), 2010* (poster).

11) K. S. Sesh Kumar, Sukesh Kumar and C. V. Jawahar, On Segmentation of Documents in Complex Scripts, *In Proceedings of International Conference on Document Analysis and Recognition (ICDAR), 2007* (poster).

12) K. S. Sesh Kumar, Anoop M. Namboodiri and C. V. Jawahar, Learning Segmentation of Documents with Complex Scripts, *In Proceedings of Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2006* (oral).

13) Sachin Rawat, K. S. Sesh Kumar, Million Meshesha, Indraneel Deb Sikdar, A. Balasubramanian and C. V. Jawahar, A Semi-Automatic Adaptive OCR for Digital Libraries, *In Proceedings of IAPR Workshop on Document Analysis Systems (DAS), 2006* (oral).

14) K. S. Sesh Kumar, Anoop M. Namboodiri and C. V. Jawahar, Learning to Segment Document Images, *In Proceedings of International Conference on Pattern Recognition and Machine Intelligence (PReMI), 2005* (oral).

PREPRINTS   1) K. S. Sesh Kumar, A. Barbero, S. Jegelka, S. Sra, F. Bach, "Convex Optimization for Parallel Energy Minimization". *In arXiv:1503.01563, 2015.*