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RESEARCH NAME K. S. Sesh Kumar

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INFORMATION Imperial College London.

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ACADEMIC **Data Science Institute, Imperial College London.**

POSITIONS Research Fellow, (Sept 2019 - Present).

- Advisor : Prof. Yi-Ke Guo

Statistical machine learning group, Imperial College London.

Research Associate, (Dec 2017 - Aug 2018).

- Advisor : Dr. Marc Deisenroth

Kolmogorov group, IST Austria.

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

- Advisor : Prof. Vladimir Kolmogorov

EDUCATION **SIERRA, École Normale Supérieure/INRIA, Paris, France.**

Doctoral Student, (May 2013 - Sept 2016).

- Advisor : Prof. Francis Bach

École Normale Supérieure, Cachan, FRANCE.

Masters in MVA (Mathématiques Vision et Apprentissage), (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

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.*

PUBLICATIONS 1) K. S. Sesh Kumar, F. Bach and T. Pock, “Fast Decomposable Submodular Function Minimization using Constrained Total Variation”. *In Neural Information Processing Systems, 2019.*

2) Riccardo Moriconi, Marc P. Deisenroth and K. S. Sesh Kumar, “High-Dimensional Bayesian Optimization with Manifold Gaussian Processes”, *In Bayesian Deep Learning workshop at NeurIPS, 2019.*

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

4) K. S. Sesh Kumar and Marc P. Deisenroth, “Differentially Private Empirical Risk Minimization with Sparsity-Inducing Norms”, *In Privacy Preserving Machine Learning*

(PPML), 2018.

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

6) 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.

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

8) 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).

9) 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).

10) 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).

11) 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).

12) 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).

ACADEMIC/WORK **WILLOW - project team**, INRIA, Paris, FRANCE.

EXPERIENCE

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.

PROFESSIONAL
EXPERIENCE

AMD Research and Development India Pvt. Ltd., Hyderabad, INDIA.

GPGPU Engineer June, 2006 - January, 2010

AWARDS AND
FELLOWSHIPS

Research Fellowship by Leverhulme Centre for the future of Intelligence.
Data Science Institute Seed funding at Imperial College London, 20000 GBP.
Research Fellowship by Data Science Institute at Imperial College London.