# Siddhartha Chandra

https://siddharthachandra.github.io/

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## Education

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|---|---|
| 2014–today | **PhD in Machine Vision**<br>**INRIA Galen & Centrale-Supélec Paris** |
| 2007–2013 | **Bachelor of Technology (Honours) + M.S. by Research**<br>**IIIT Hyderabad.** CGPA: 9.3/10 |
| 2006–2007 | **AIEEE All India Rank** 2532 (99.64 percentile)<br>**IIT All India Rank** 3879 (99.14 percentile) |
| 2004–2006 | **ISC XII$^{th}$ Board**<br>Overall Percentage: 94.0% *St. Joseph's College, Allahabad* |
| 2004 | **ICSE X$^{th}$ Board**<br>Overall Percentage: 95.4% *St. Joseph's College, Allahabad* |

## Research Positions

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|---|---|
| 2017 | **Research Intern, Facebook Artificial Intelligence Research, Paris** |
| 2014–today | **PhD Student, INRIA Galen & Centrale-Supélec Paris** |
| 2009–2013 | **Research Assistant, Center for Visual Information Technology, IIIT Hyderabad** |
| 2010–2011 | **Research student visitor, Visual Geometry Group, University of Oxford** |

## Research Activities, Interests

⋆ Deep Learning ⋆ Structured Prediction ⋆ Recurrent Networks

## Publications

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| 2017 | **Structured Output Prediction and Learning for Deep Monocular 3D Human Pose Estimation.** S. Kinauer, A. Guler, S. Chandra, I. Kokkinos. *(under review @ NIPS)* |
| 2017 | **Deep, Dense, and Low-Rank Gaussian Conditional Random Fields.** Siddhartha Chandra, Iasonas Kokkinos. *ICCV, Italy* |
| 2016 | **Fast, Exact and Multi-Scale Inference for Semantic Image Segmentation with Deep Gaussian CRFs.** Siddhartha Chandra, Iasonas Kokkinos. *ECCV, Netherlands* |
| 2016 | **Human Joint Angle Estimation and Gesture Recognition for Assistive Robotic Vision.** Alp Guler, Siddhartha Chandra, Iasonas Kokkinos et.al. *Oral, ECCV Workshop* |
| 2015 | **Accurate Human-Limb Segmentation in RGB-D images for Intelligent Mobility Assistance Robots.** Siddhartha Chandra, S. Tsogkas, I. Kokkinos. *Oral, ICCV Workshop* |
| 2015 | **Surface Based Object Detection in RGBD Images.** Siddhartha Chandra, Grigoris Chrysos, Iasonas Kokkinos. *Oral Presentation, BMVC, Wales* |
| 2013 | **Partial Least Squares Kernel for Computing Similarities between Video Sequences.** Siddhartha Chandra, C.V. Jawahar. *Oral Presentation, ICPR, Japan* |
| 2013 | **Sparse Discriminative Fisher Vectors in Visual Classification.** Vinay Garg, Siddhartha Chandra, C.V. Jawahar. *ICVGIP, India* |
| 2012 | **Learning Non-Linear Supspaces using K-RBMs.** Siddhartha Chandra, Shailesh Kumar, C.V. Jawahar. *CVPR, USA* |
| 2012 | **Learning Hierarchical Bag of Words using Naive Bayes Clustering.** Siddhartha Chandra, Shailesh Kumar, C.V. Jawahar. *ACCV, Korea* |

## Relevant Research Projects

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|---|---|
| Deep Learning | **Multi-Scale Inference for Dense-Labeling Tasks with Deep Gaussian CRF**<br>Learning multi-scale pairwise interactions via Gaussian-CRFs for a variety of dense-labeling and regression tasks in an end-to-end deep learning architecture. |
| Human Pose<br>ROS | **Real-Time Human Joint Angle Estimation** *(part of successfully concluded EU Project)*<br>Research for **MOBOT** (EU Project): deep learning pipeline implemented for real-time performance on the Robotics Operating System. |
| Deep Learning | **Facial Landmark Localization using Deep Structured Prediction**<br>End-to-end deep DPMs for face detection and landmark localization. |
| Deep Learning | **LSTMs for semantic segmentation** *(Ongoing)*<br>Training conditional LSTMs for semantic segmentation. |
| Deep Learning | **Human part segmentation in RGB-D Images**<br>Learning to parse humans in RGB-D images from diverse data using deep networks. |
| Pictorial<br>Structures | **Surface based Object Detection for RGB-D Images**<br>Emploing 3-D models for better initializing a mixture of Deformable Part Models. |

## Relevant Programming Projects

- ⋆ Efficient Implementation of the Conjugate Gradients Method for sparse, dense systems on the GPU in `Caffe` using `cudablas`, and `cudasparse` libraries.
- ⋆ `Caffe` Implementation for end-to-end training of Gaussian CRFs.
- ⋆ `Caffe` Implementation for end-to-end training of conditional Spatial-LSTMs.
- ⋆ Real-Time Human-Pose Estimation framework using `Caffe` and `ROS`.

## Relevant Courses Taken

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|---|---|
| Research | Machine Learning, Computer Vision, Pattern Recognition, Digital Image Processing, Artificial Intelligence, Computer Graphics, Speech Systems |
| Other | Data Structures, Algorithms, Theory of Computation, Operating Systems, Computer Organization, Software Engineering, Database Management, Compilers, Computer Networks |

## Other Positions

- ⋆ Working as **System Administrator** for CVN, Centrale-Supélec Paris. *Setting up GPU servers.*
- ⋆ Worked as **System Administrator** for CVIT, IIIT Hyderabad. *Familiar with Sun-Grid Engine, among other Linux Administration tools.*
- ⋆ Worked as a **Teaching Assistant** for the following courses at IIIT Hyderabad through the $3^{rd} - 5^{th}$ year: **Computer Vision** (1 *semester*), **C Programming** (2 *semesters*), **Algorithms** (1 *semester*), **Information Technology** (2 *semesters*).

## Skill Set

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| Programming | C, C++, Python, Bash, MATLAB |
| Libraries | `Caffe`, `Caffe-2`, `pyTorch`, `ROS`, `Eigen`, `CUDA` |