LinkedIn|:
Github|:

LIU Hao | Curriculum Vitae

Born in 1994 - 24 years

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22 Rue Charles de Gaulle, 91400 Orsay, France

Master student in Machine Learning. Passionate about Machine Learning, with a special interest in Computer Vision and looking forward to a PhD position.

Education

- **University of Paris-Saclay (Paris-Sud University)** — **Paris - Orsay**
  M.Sc. with High Honors, in Machine Learning. — *2018–2019*
- **École nationale supérieure d'informatique pour l'industrie et l'entreprise** — **Paris - Évry**
  M.Sc. in Computer Science. — *2016–2019*
- **Xidian University** — **Xi'an, China**
  B.Sc. in Electronic Science and Technology , — *2013–2017*

Academic Projects

- **Master's Thesis:** *Multi-Task Learning (ongoing)*
  I work on real time MTL system for autonomous driving. Given limited embedded GPU resources low end, I created a MTL architecture which can perform both object detection and road segmentation in real time on a common GPU with a high precision by using deep learning. I benchmarked multi architectures to search the optimum solution in PyTorch. [slides] Advisor: B. Ravi Kiran
- **Data Science Competition:** *Mars craters detection*
  This ambitious project is held by École Polytechnique. It is the largest data science competition for students in France. I adapted SSD, a deep learning multi-object detection model, for the detection of Mars craters in order to characterize planetary surfaces and study the geological history of planets. Ranking 6/148. [slides] Advisor: Alexandre Gramfort
- **Master's Project:** *Aerial Image Classification*
  From aerial views, classifying 45 common objects on the land. For promoting economic development while protecting the environment. We benchmarked pre-trained models from ImageNet by transfer learning to accomplish the challenge. [slides] Advisor: Isabelle Guyon
- **Master's Project:** *ICML 2018 paper review and implementation*
  An overview of regularization techniques in deep learning, with the purpose of fine-tuning for retaining the features learned on the source task, we implemented and compared six regularizers by adding inductive bias to perform transfer learning to image classification. [slides] Advisor: Antoine Cornuéjols
- **Master's Project:** *Colorization automatic*
  Given a gray-scale photograph as input, I worked in a team and implemented a feed-forward Convolutional Neural Networks to colorize it automatically. [GitHub] Advisor: Yohann Tendero

Industrial Experience

- **Internship:** — **Navya Group**
  Machine learning team at Navya, Paris, France — *6 months, 2019*
  Multi-Task learning for autonomous vehicles, object detection, road segmentation and scene understanding

- **Internship:** **Prédical**
  Data science team at Prédical, Paris, France *3 months, 2018*
  Feature selection
  Data statistics with pandas, numpy,
  Principal Component Analysis and correlation analysis,
  Data visualization with Matplotlib, Seaborn and ggplot.
- **Internship:** **Caldera**
  Machine learning team at Caldera, Strasbourg, France *3 months, 2017*
  Data mining to establish a DNN model so as to better the company's production efficiency.
- **Internship:** **Xidian University**
  Production pratice at Xidian University, Xi'an, China *2 weeks, 2015*
  Manufacture of a hammer, fabrication of a radio by CNC machine.

Selected Technical Reports

- Multi-Task Learning for Autonomous Driving [slides] [video]
- Review of Explicit Inductive Bias for Transfer Learning with Convolutional Networks [pdf]
- Recognition of Natural Landscape Images [pdf]

Technical and Personal Skills

- **Language:** English (IELTS 7.0, CEFR C1), French(CEFR C1), Chinese (Native)
- **Machine Learning Framework:** PyTorch, Keras, Tensorflow, Scikit learn
- **Programming Language:** Proficient in Python, C, C++, R, Matlab
- **Parallel Computing:** Pthread, OpenMPI, OpenMP, Lustre
- **Data Analysis:** Numpy, Scipy, OpenCV, Matplotlib
- **Other Interests:** Calisthenics, Hiking

References

- **B. Ravi Kiran**
  Website
  Machine learning Team
  Navya Group
  ravi.kiran@navya.tech
- **Alexandre Allauzen**
  Website
  LIMSI-CNRS
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