

# Jiaxin Gu

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## JOB OBJECTIVE

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**Research Intern** on Computer Vision, Deep Learning, Machine Learning

## EDUCATION

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- 2017.9-2020.1, Beihang University, M.S. in Pattern Recognition and Intelligent System (3/30)
- 2013.9-2017.6, Beihang University, B.Eng. in Automation Science (4/210+)

## PUBLICATIONS

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- Projection Convolutional Neural Networks for 1-bit CNNs via Discrete Back Propagation, **Jiaxin Gu**, Ce Li, Baochang Zhang, Jungong Han, Xianbin Cao, Jianzhuang Liu, David Doerman. *The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19, Oral)*, 2019.
- Circulant Binary Convolutional Networks: Enhancing the Performance of 1-bit DCNNs with Circulant Back Propagation, Chunlei Liu, Xin Xia, Baochang Zhang, **Jiaxin Gu**, Xianbin Cao, Jianzhuang Liu. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR-19)*, 2019.
- One-two-one networks for compression artifacts reduction in remote sensing, Baochang Zhang\*, **Jiaxin Gu\***, Chen Chen, Jungong Han, Xiangbo Su, Xianbin Cao, Jianzhuang Liu. *ISPRS Journal of Photogrammetry and Remote Sensing (Top Journal in RS)*, 2018.
- Deep-Patch Orientation Network for Aircraft Detection in Aerial Images, Ali Maher, **Jiaxin Gu**, Baochang Zhang. *Advances in Image and Graphics Technologies*. 2017.

## SKILLS

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- Knowledgeable in **DL model compression and acceleration, compression artifacts reduction, object classification and detection, machine learning**.
- Experienced in Python, MATLAB, C/C++, Shell. Familiar with Linux environment and CUDA.
- Proficiency with **PyTorch** (torchvision contributor), able to write *cpp-extension* and Caffe.
- Excellence in academic reading, writing and illustrations drawing. CET4: 592, CET6: 572

## PROJECTS

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- **Hawei Hisilicon AI Chip Project (Project Da Vinci): Design and Application of 1bit CNNs**  
**Main contributor, 2018.09-Now**  
To design an advanced algorithm to maintain the performance of CNNs (ResNet18, VGG16, et.al.) with both the weights and activations binarized. We achieve the state-of-the-art classification accuracy of 1bit CNNs on ImageNet. This algorithm is planned to be applied on the AI chip, *Ascend*.
- **Implementation of Center Loss on PyTorch** **Owner, 2017.07-2018.10**  
The most popular third-party implementation of center loss with 170+ stars on GitHub.

## AWARDS&HONORS

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- Guorui Scholarship(top 2 of school), 2018
- Outstanding Student, 2016&2018
- National Endeavor Scholarship, 2015
- First-class Academic Scholarship, 2018
- Honorable Mention, MCM/ICM, 2016
- First-class Academic Scholarship, 2015

# 顾佳昕

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## 求职意向

计算机视觉、深度学习、机器学习领域的算法研究实习生

## 教育经历

- 2017.09 至 2020.01 北京航空航天大学 模式识别与智能系统 硕士(推免) 班级排名: 3/30
- 2013.09 至 2017.06 北京航空航天大学 自动化 学士 专业排名: 4/210+

## 科研经历

- Projection Convolutional Neural Networks for 1-bit CNNs via Discrete Back Propagation, **Jiaxin Gu**, Ce Li, Baochang Zhang, Jungong Han, Xianbin Cao, Jianzhuang Liu, David Doerman. *The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19, Oral)*, 2019.
- Circulant Binary Convolutional Networks: Enhancing the Performance of 1-bit DCNNs with Circulant Back Propagation, Chunlei Liu, Xin Xia, Baochang Zhang, **Jiaxin Gu**, Xianbin Cao, Jianzhuang Liu. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR-19)*, 2019.
- One-two-one networks for compression artifacts reduction in remote sensing, Baochang Zhang\*, **Jiaxin Gu\***, Chen Chen, Jungong Han, Xiangbo Su, Xianbin Cao, Jianzhuang Liu. *ISPRS Journal of Photogrammetry and Remote Sensing (遥感图像处理顶刊)*, 2018.
- Deep-Patch Orientation Network for Aircraft Detection in Aerial Images, Ali Maher, **Jiaxin Gu**, Baochang Zhang. *Advances in Image and Graphics Technologies*. 2017.

## 专业技能

- 硕士期间重点研究机器学习、深度学习模型压缩与加速、图像压缩效应修复和目标识别与检测问题, 发表顶会论文 2 篇、顶刊论文 1 篇
- 熟悉 Linux 开发环境, 掌握 Python、MATLAB、C++、shell 等编程语言, 熟悉 CUDA 并行编程
- 熟悉深度学习 PyTorch 框架(torchvision 的 contributor 之一), 擅长编写扩展模组, 熟悉 Caffe 平台。实现论文 Center loss 的 PyTorch 版代码, 并在 GitHub 上获得 170+ 的 star (Most popular)
- 具备优秀的文献阅读与写作能力, CET4: 592, CET6: 572
- 熟练使用 Latex 排版, 擅长绘制论文插图

## 项目经历

- 华为海思 AI 芯片项目 (达芬奇计划) —— 1bit 卷积神经网络的设计与应用** 主要参与者  
在同时二值化卷积核与输入特征的情况下, 通过增加一定比例的额外运算, 使得 1bit 卷积神经网络在华为“昇腾” AI 芯片上达到合同要求的精度。该项目为实验室 CVPR 与 AAAI 工作的落地化成果。
- 航天四院东风某型号导弹目标检测系统开发** 前期参与者、方案制定者  
在弹载处理器计算能力有限的情况下, 利用传统图像均值、方差、HOG 等手工特征, 结合改进后的 SVM 算法, 完成海上目标检测任务。

## 曾获奖励

- 中电十四所国睿奖学金(学院仅 2 人), 2018
- 北航优秀生, 2016; 优秀研究生, 2018
- 国家励志奖学金, 2015
- 北航学业一等奖学金(前 20%), 2018
- 美国大学生数学建模大赛二等奖, 2016
- 北航学习优秀一等奖学金, 2015