# Xuelei Chen

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## Education

**Shanghai Jiao Tong University** **Sept 2018-June 2021**

- M.Sc. in Instrument Science and Technology (GPA: 3.55/4.0)
- Advisor: Prof. Cunyue Lu

**Technical University of Berlin** - Double Degree Program **Oct 2017-Sept 2019**

- M.Sc. in Computer Engineering (GPA: 1.5/1.0)
- Advisor: Prof. Begum Demir

**Shanghai Jiao Tong University** **Sept 2014-June 2018**

- B.Eng. in Measurement Control Technology and Instruments (GPA: 88.4/10; Ranking:1/51)

## Publications

**Attentional Dilated Convolution Neural Network for Nuclei Segmentation in Histopathology Images**

- Chao Yi, **Xuelei Chen**, Lingwei Quan, and Cunyue Lu.
- *2020 Chinese Automation Congress (CAC 2020).*

**Progressive Attentional Learning for Underwater Image Super-Resolution**

- **Xuelei Chen**, Shiqing Wei, Chao Yi, Lingwei Quan, and Cunyue Lu.
- *The 13th International Conference on Intelligent Robotics and Applications (ICIRA 2020).*

**Towards Safe and Socially Compliant Map-less Navigation by Leveraging Prior Demonstrations**

- Shiqing Wei, **Xuelei Chen**, Xiaoyuan Zhang, and Chenkun Qi.
- *The 13th International Conference on Intelligent Robotics and Applications (ICIRA 2020).*

**An End-to-End Adversarial Hashing Method for Unsupervised Multispectral Remote Sensing Image Retrieval**

- **Xuelei Chen**, and Cunyue Lu.
- *The 27th IEEE International Conference on Image Processing (ICIP 2020).*

## Research Experience

**Perception and Control of Underwater Robots** **Shanghai, China**

***Master Thesis at Shanghai Jiao Tong University*** *Dec 2019 - Present*

- Developed a new method for underwater image super-resolution to improve visual perception, which outperforms the state-of-the-arts.
- Tested PID-based and vision-based navigation of underwater robots in known and unknown environments. Conducted simulation experiments in ROS and UWSim.

**NIR Image Colorization** **Shanghai, China**
***VCIP 2020 Grand Challenge*** *Sept 2020 - Sept 2020*

- Implemented a new image colorization network, which is composed of a DenseNet as the encoder and a RCAN as the decoder. Achieved an average angular error of 5.90. (Unluckily, our team didn't enter top 5.)

**GANs for Content-based Retrieval of Multispectral Images** **Berlin, Germany**
***Master Thesis at Technical University of Berlin*** *Oct 2018 - Sept 2019*

- Implemented ACGAN and Conditional DCGAN for remote sensing image generation. Improved supervised hashing for image retrieval with generated images.
- Proposed a novel unsupervised hashing method combining multiple loss functions, which outperforms the state-of-the-arts.

**Machine Learning in Metrology** **Berlin, Germany**
***Internship at PTB Berlin*** *May 2019 – Aug 2019*

- Applied basic RNN and LSTM methods to electric grid analysis and achieved accurate grid state estimation.
- Implemented fully connected neural network and autoencoder methods for image spectra reconstruction.

**Deep Learning Based Real-Time Face Detection** **Shanghai, China**
***Undergraduate Research at Shanghai Jiao Tong University*** *Apr 2017 – Sept 2017*

- Implemented MTCNN, which composes of P-Net, R-Net and O-Net, to achieve accurate face detection.
- Wrote Python codes to analyze video frames and detect faces in real time.

**Tactile Sensor for Soft Robot** **Shanghai, China**
***Undergraduate Research at Shanghai Jiao Tong University*** *Sept 2016 – Apr 2017*

- Designed the structure of the sensor, which consists of two optical fiber bundles, cylinder-shaped probe head and 14 tactile sensing tips.
- Wrote C++ codes to measure the intensity of light reflected from different tips using image processing. Calibrated the sensor with the force gauge.

## Awards and Honors

- **Excellence Scholarship**(Top 5 in the department), Shanghai Jiao Tong University. 2020
- **E+H Scholarship**(Top 5 in the department), Endress+Hauser AG & Shanghai Jiao Tong University. 2017
- **National Scholarship**(Top 1 in the department), Ministry of Education of P.R.China. 2016
- **Yousheng Weighing Apparatus Scholarship**(Top 5 in the department), Yousheng Weighing Apparatus Co., Ltd & Shanghai Jiao Tong University. 2015

## Skills

- **Programming**: Python, MATLAB, C/C++
- **Tools**: Tensorflow, Pytorch, Keras, ROS, OpenCV, LaTex, Git
- **Software**: Simulink, LabVIEW

## Additional

- **Standardized tests**: GRE: V153+Q170+AW3.5, TOEFL: 104(R30+L26+S22+W26)