

# Shu Nakamura

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<https://github.com/woodyZootopia>

## SKILLS

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- C, C++, Python, R, HTML, CSS/SCSS, JavaScript
- Numpy, Scipy, Pandas, Matplotlib, TensorFlow, Keras, Pytorch, CUDA and OpenCV
- Expertise with development on Linux, Git
- Understanding of electronics, computer vision, sound processing, deep learning and computer networking

## EXPERIENCE

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- METRICA, May. 2019 - Sep. 2019  
Machine Learning Research Intern
  - Created an integrated object detector for medical use with Edge TPU
  - Augmentation of training datasets with OpenCV, Pytorch, Scipy
- KIMIA Lab, Dec. 2018 - Apr. 2019  
Computer Vision Research Assistant
  - Worked on rewriting a new feature extraction program from MATLAB to C++ for inference acceleration
- WATonomous, Self Driving Car Team, Nov. 2018 - Apr. 2019  
Perception Engineer - Lane Detection
  - Implemented deep learning models and postprocessings to detect lane lines
- RIST, Dec. 2017 - Aug. 2018  
Machine Learning Development Intern
  - Created anomaly detector in printed matters, and decreased error detection rate by 70%
  - Worked on Sleep Apnea Syndrome detector using patients' X-ray photographs and increased precision by 30%

## RELEVANT ACTIVITIES/PROJECTS

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- Japanese Olympiad in Informatics 2016 Finalist when in High School, placed in the top 80th out of over 1000 participants in a nation-wide competitive program contest
- Created CNN-based musical onset detector using Japanese rhythm game "Taiko: Drum Master" ([A report](#) and [the source code](#) is available) by using Fourier Transforms to generate a mel-scale spectrogram to perform image analysis
- Carried out a research on evaluation of several solutions of Rubik's Cube when in High School, with Monte Carlo method program written in C++
- Working to code C compiler in C from scratch as a hobby. So far, it can compile basic arithmetics, external function calls with arguments, function definition, and branching. Repository: <https://github.com/woodyZootopia/woodycc>

## EDUCATION

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- University of Waterloo, Sep. 2018 - Apr. 2019  
Bachelor of Mathematics, Computer Science
- Kyoto University, Apr. 2017 - Present  
Bachelor of Engineering, Electrical and Computer Engineering