YI YANG

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EDUCATIONS

Columbia University *Sep 2021 - Dec 2022 (Expected)*
Master of Science in Electrical Engineering - GPA: 4.08 / 4.33 *New York, NY*
MS Honors Student (top 10%)

Southeast University *Aug 2016 - Jun 2020*
Bachelor of Engineering in Information Science and Technology - GPA: 3.7 / 4.0 *Nanjing, China*

SKILLS

Programming Languages: C/C++, Python, Go, Java, MATLAB, SQL, Shell Programming, LaTeX.
Tools & Software: Git, UNIX/Linux, Visual Studio, PyTorch, OpenCV, OpenSSL, C++ STL, CMake.
Frameworks & Database: MySQL, PostgreSQL, Neo4j, MongoDB, Flask, Spark.

EXPERIENCES

Zscaler, Inc. *May 2022 - Aug 2022 (Expected)*
Software Development Engineer Intern *San Jose, CA*

- Created **a disaster-recovery activation DNS record generator tool** in C++ for Windows system that interacts with users and produces multipart DR activation DNS text records.
- Constructed **an encryption library** based on **OpenSSL** for the DR activation tool to generate RSA key pairs, sign and verify DR activation DNS text records.
- Implemented a workflow with Jenkins on **continuous integration and continuous deployment** of Microsoft Visual Studio Solutions for the team.
- Helped customers without disaster-recovery background knowledge generate DR activation text records in standard format under Windows systems.

Yijiahe Technology Co., Ltd. *Jun 2020 - Jul 2021*
Full-time Software Development Engineer *Nanjing, China*

- Individually devised and built **an environment modelling and object detection/segmentation system** for a multi-sensor robot hardware platform in outdoor electric power operation work.
- Developed **a sensor joint calibration software** in C++ to calculate transformation matrix based on **OpenCV** and **Eigen** to merge data from RGB camera and depth camera to **build 3D models of the environment**.
- Trained and applied **Mask R-CNN** to conduct Instance Segmentation based on **PyTorch** and refined model structure and parameters to adapt to variant image quality.
- Combined the above components into **a low-latency Image Segmentation library** in C++ based on **libtorch** and **torchvision**.
- Deployed this system on new generation of electrical power operation robots, **reached > 98% precision** in real fieldwork and **automate manual labor** with existing hardware platform.

PROJECTS

Automatic Image Labelling Software *Oct 2021 - Dec 2021*
Columbia University, Big Data Analysis *New York, NY*

- Built back-end based on **Flask** in **Model-View-Controller (MVC) framework** in Python. Applied **Faster R-CNN** to generate labelling annotations in JSON format for efficient HTTP POST and GET.
- Constructed front-end based on **React Electron** to display login/register panel, settings panel, visualize image labelling results using JavaScript.
- Adopted **relational databases** to store user information and operation logs to support customized service for multiple users and easy query of operation history.
- Saved **over 80% of image labelling time** compared with manually labelling using LabelMe.