Products and Application developer (Python/C++/Data Scientist) Products and Application developer (Python/C++/Data Scientist) Products and Application developer (Python/C++/Data Scientist) - SERVO-ROBOT, Inc Fairfield, CT 5 (Five) years of experience as Data Scientist / Python / C++ developer and Data Analyst with technical prowess. Worked on projects which involved Deep Learning, Machine Learning Algorithms, and Data transformation. Handful experience with performing Data Analysis with compiling, analyzing, validating, modeling data sets and developing Machine Learning models including neural network models for solving the industry problems. Utilized machine learning models like KNN, ANN, BPNN, CNN, and Regression to filter the noisy data scanned from robotic vision system. Hands on project experience of Neural Network framework like TensorFlow and Caffe. Involved in Software Development, Production, Support, troubleshooting, Maintenance using C/C++. Hands on working knowledge of Linux operating system, Windows OS for machine learning applications to create and analyze data sets. Strong experience in C/C++ on Linux using STL, MATLAB, multithreading, Boost libraries, data structures, TCP/IP socket programming. Strong in Object-Oriented Programming (OOP), Object Oriented Analysis and Design patterns. Experience in various aspects of system architecture, software design, development, implementation and validation. Good knowledge on IoT (Internet of Thing) end-to-end application development. Provided Software Configuration Management, Source Control and Version Control using tools including TFS and Git. Expert in debugging application using debugging tools provided by the Visual Studio. Proficient in translating highly technical concepts into business language so that key stakeholders can make informed decisions. Experience using in Python, Shell, Bash scripts, Kernel debugging. Worked on UML on creating class, sequence, activity, deployment diagrams. Good experience with both Waterfall and Agile/Scrum development. Enthusiastic and quick to learn new technologies and tools and willing to take responsibilities. A good team player with strong communication and time management skills makes efforts to do the work at hand. Authorized to work in the US for any employer Work Experience Products and Application developer (Python/C++/Data Scientist) SERVO-ROBOT, Inc - Fairfield, CT February 2016 to Present Project: I-FACT (03/18 to Present) Description: Our team

are developing a software for welding inspection real time for robotic visual system, which will be used to determine whether the weld is of suitable quality for its intended application. Responsibilities Designed a noisy filter algorithm to remove noisy data from outer layer and smooth the edge for 3D point cloud obtained from robotic visual system by using C++. Visualized 3D point cloud Data and did simple cloud data operation like subtraction, computer cloud to cloud distance with Cloud Compare. Converted 3D point cloud data to RGB images for welding classification using C++ Used TensorFlow framework to implement convolutional neural network to do welding bead type classification with Python. Analyzed and worked with all aspects of regression models to interpolate the invalid data such as missing value or unreasonable values Prepared Neural Network training data sets with standardized data methods Classified 3D point cloud data of different types of welding bead with PointNet++ using python. Designed Artificial Neural Network to do classification to filtering noisy welding profile. Fine tuning the Neural Network such as change the activation functions and learning rate to acquiring a higher Neural Network training accuracy Experienced on Matlab Machine Learning Toolbox for different kinds of deep learning methods. Designed and developed data management system using MySQL. Environment: Python, C++, TensorFlow, ANN, CNN, PointNet++, regression, MySQL, Cloud Compare, Point cloud, Matlab, Visual Studio 2015 SERVO-ROBOT, Inc September 2017 to March 2018 Description: Designed a software to convert the CAD file to Servo Robot application readable 3dx file for further utilization, for example trajectory generation Responsibilities Used Draw.io for design of application diagram such as use cases, block diagram, high-level and low-level diagram. Used C++ STL containers, algorithms in the application. Visualized CAD file with freeCAD. Integrated freeCAD source code to our software and implement the function from freeCAD to converted CAD file to point cloud file. Implemented PCL API to do point cloud computation and OpenCV for point cloud visualization in visual studio 2015. Conducted code reviews according to C++ Coding Standards and Conventions. Worked on Performance Improvement &memory leakage. Used Git for source code control, followed Agile and Scrum Methodologies. Developed the Test Cases according to the Requirements. Verification and Validating the Application Software Environment:

C++, freeCAD, CAD, STL, Point cloud, PCL, Git, Draw.io, Visual Studio 2015 Project: Jetson TX1 (04/17-09/17) Description: Jetson TX1 is an embedded system development kit, is for AI computing designed to get you up and running fast with CUDA cores. It's in Linux system and includes the latest technology for deep learning, computer vision, GPU computing, and graphics. This is an individual project, aim to integrate new SERVO-ROBOT controller for high end applications such as high-speed tracking and inspection system to Jetson TX1. Responsibilities Set up an environment for embedded applications using Jetson TX1 Kit and Ubuntu server. Experienced on CUDA programing for performance optimization Connected SERVO-ROBOT camera with high speed communication with controller using Giga Ethernet protocol. Gathered images using 2D Giga camera. Used QT for GUI Development. Implemented OpenCV functions on 2D image. 3D visualization with OpenGL. CMake build Caffe on Ubuntu system, installed CUDA and cuDNN to speed Caffe model. Developed Convolutional Neural Network with Caffe on Jetson for welding bead localization and used GPU to increase the neural network training speed. Utilized graphics debugger tool and system profiler tool on Jetson TX1. Developed Python Scripts for diagnostic purposes. Environment: Linux, Giga Ethernet protocol, Jetson TX1, OpenCV, OpenGL, QT, Caffe, CNN, Graphic Debugger Tool, System Profiler tool, CUDA Project: Welding bead localization (03/17-02/16) Description: Research and design an algorithm to locate the welding bead. This algorithm was implemented on robotic vision system for welding seam finding. Responsibilities Tested different types of deep learning methods with Matlab machine learning toolbox. Developed image processing algorithms to perform image processing on welding images to locate the welding bead with Java using ItelliJ. Implemented Template -Matching algorithm from PCL to detect the welding area for 3D welding profile map by using C++. Converted 3D welding profile map to RGB images for neural network training. Converted data format to HDF5 for Convolutional Neural Network training. Designed and created Convolutional Neural Network using Caffe framework in C++ for welding bead localization. Fine tuning Neural Network with hyper parameters to increase the Neural Network training accuracy Wrote documentation for Neural Network fine tuning procedure. Experienced on different kinds of activation functions for Neural Network.

Environment: Matlab, Caffe, Template Matching, Java, Image processing, 3Dwelding profile map Full Time Internship China Hubei Electrical Power Design Institute November 2014 to April 2015 Software Engineer (c++) Description: Our team define, design and deliver a BOM Information System, which is desktop application to eliminate the manual files of data such as Planning Requisitions, Planning BOM, and Engineering BOM. Data from source systems will be pushed into the data tool, then end user can efficiently import, add, manipulate import data, and export data, which accelerates the process of material ordering and planning. Responsibilities Participated in the requirement gathering process and determined technical requirements of project to ensure that specifications are met. Supported project planning process with design options, work estimates and requirement analysis. Involved in systems architecture design and applied design patterns, OOP, and STL. Used C/C++ interface to retrieve/update info from/to the database. Implemented functionality such as filtering, sorting, searching, and alerting using C++. Displayed progress through a sequence of logical and numbered steps and display a transient feedback message after a step is saved. Provided input to Microsoft SQL Server database architecture design and data migration from internal data sources. Fixed software issues and documented software development cycle phases. Tested and developed C++ applications for Windows platform. Environment: C++, OOP, STL, SQL Server 2008, Visual Studio 2008 Software Engineer (c++) Shenzhen Ruanku Information Technology May 2014 to October 2014 Description: The project was to develop a license plate recognition system to detect and recognize the license plate from video stream real time. Responsibilities Analyzed video and extract frames with license plate using OpenCV. Applied Image processing algorithms like grayscale, Sobel filter, Dilation, and Erosion from OpenCV to get the license plate using C++. Experienced on Image segmentation. Utilized SVM to do characters recognition to recognize all numbers from license plate. Designed simple UI using Microsoft Foundation Classes (MFC). Developed the Test Cases according to the Requirements and tested the system. Used C++ STL containers, algorithms in the system. Used Microsoft team foundation server (TFS) for source code control, followed Agile and Scrum Methodologies. Fixed software bugs and documented software development cycle phases.

Environment: OpenCV, MFC, C++, Visual Studio 2005, SVM, Image processing, STL, TFS, Education Master's Skills .NET (4 years), C+ (4 years), Matlab (3 years), Python (3 years), Visual Studio (4 years)

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