Kailash Khadka . Jarvis Consulting

A recent graduate from the University of Waterloo with a specialization in AI and Machine Learning. Was a teacher, had been an engineer, now an aspiring Software Engineer but always a keen learner. Working and learning through numerous courses and projects, built a solid programming foundation and discovered my passion in the software and data engineering realm influenced by the way this technology is improving standards in the present and shaping the future. A natural problem-solver passionate about developing smart solutions to challenging problems, always looking to contribute to the growth of my employers while growing alongside. Currently working at Jarvis on various application development activities using technologies and tools like Linux, Python, Java, Springboot, REST API, SQL, BASH, Data Analytics, Docker, Maven, and more. My invaluable experiences at the CIBC and Jarvis have helped me forge myself into a dedicated and highly-adaptive professional with a better understanding of collecting business requirements, architecting and implementing solutions using the right tools and technologies, and capable to work in a fast-paced collaborative environment delivering quality products on tight deadlines.

Skills

Proficient: Java, Python, Linux/Bash, RDBMS/SQL, Agile/Scrum, Git

Competent: C++, MATLAB, Data Analysis [R, SPSS], Machine Learning Packages [TensorFlow, Keras, ScikitLearn, NLTK], Python Libraries [Numpy, Scipy, Pandas, Matplotlib, Pyplot, Seaborn]

Familiar: Docker, GCP, Google Colab, Kaggle, OpenCV, Dronekit, Raspberry Pi, PLC, RSLlogix, SCADA

Jarvis Projects

Project source code: https://github.com/jarviscanada/jarvis_data_eng_KailashKhadka

Cluster Monitor [GitHub]: Designed and implemented a Linux Cluster Administration (LCA) system that manages a cluster of nodes running CentOS 7 and periodically monitors and logs hardware specification and data usage of each node in an RDBMS database. Created and used a VM instance in GCP and deployed in Docker engine and PostgreSQL with BASH scripting.

Core Java Apps [GitHub]:

- Twitter App: In Progress
- JDBC App: In Progress
- Grep App: Implemented a Java application that searches for a text pattern recursively in a given directory, and outputs matched lines to a file. This application implements a Java interface, uses libraries like java.io, java.util, and java.slf4j for logging. This project was written in Intellij IDEA with Maven project management and deployed on a docker engine.

Highlighted Projects

Feature Extraction and Classification on Fashion MNIST Image Dataset: Conducted exploration, analysis, and classification of the Fashion MNIST dataset using machine learning algorithms PCA, Random Forrest, k-SVMs and deep learning models CNN, ResNet, InceptionNet, and Autoencoders and compared performance and classification results using TensorFlow and SKLearn libraries in Python.

License Plate Detection and Recognition using Joint CNNs: Implemented cascaded CNN model to detect license plate with high accuracy of 98% and fast speed followed by holistic CNN structure for recognition of detected license plates on CCPD parking dataset containing a wide variety of license plates; total 250k images. Used TensorFlow and Sklearn libraries in Python to create, train and test the models.

R Shiny App for Exploration, Analysis, and Visualization of a Dataset: Designed and developed a web-based interactive visualization application using R Shiny library to apply exploratory data analysis including data cleaning, manipulation, visualization and statistical tests.

Minimum Vertex Cover for Street Camera Deployment: Designed a multi-threaded Linux program using MINISAT solver library to solve minimum vertex cover problem to find locations such that a minimum number of street cameras could be installed to achieve full coverage of a network of roads. Coded in Python, used Linux POSIX thread library for thread implementation, MiniSAT Solver library in C++, and CMake framework to build the application. Git and GitHub were used as version control systems.

Professional Experiences

Junior Software Developer, Jarvis Consulting Group (2021-present): Worked for three months at the CIBC as an Application Developer in a fast-paced and high-pressure environment in a collaborative scrum team following Agile methodology to refactor the Alert Ingestor Java application using Scala and Spark data processing engine, used Git and GitFlow to manage version control and team coordination on the project. Coded a clustering agent application that monitors system resource usage on a Linux system using BASH scripting and Java in Intellij IDE along with Maven build automation and deployed in Docker. Worked in a dynamic collaborative environment by participating and leading daily scrum meetings, sprint meetings, and code review sessions with senior developers to discuss and solve impediments of the team

Graduate Teaching Assistant, University of Waterloo, Waterloo, ON (2020): Assisted the professor in administering Image Processing and Visual Communications course by guiding the students in the course and projects works, grading assignments and research project reports, and tracking their progress.

Commissioning Engineer, Odat Engineering Solutions, Nepal (2016-2018): Led the team in installation, testing, and commissioning of electrical equipment and systems (SCADA, Protection Systems, Local Control Units, and Power Line Carrier Communication Systems. Prepared daily, weekly, and monthly reports and monitored and executed Workplace Health and Safety Program.

O&M Engineer, BhoteKoshi Power Company, Nepal (2012-2016): Conducted operation of 45 MW hydropower plant under standard operating procedures in a high-precision work environment and Led the maintenance team for troubleshooting, repair, testing, calibration, configuration and maintenance of instrumentation, computer, electronic & electrical equipment to ensure uninterrupted power production.

Lecturer, Tribhuvan University, Kathmandu, Nepal (2010-2012): Conducted classes, tutorials, and lab activities for Digital Logic, and Microprocessor and Assembly Language Programming along with final year major project supervisions.

Education

University of Waterloo (2019-2020), Master of Engineering, Electrical and Computer Engineering

Tribhuvan University, Nepal (2010-2013), Master of Science, Information and Communication Engineering

Miscellaneous

- Chess player
- Drone Hobbyist
- Volunteer, Red Cross Society, Nepal: Blood Donation Program, 2012, 2014
- Volunteer, Let's Share Forum, Nepal: Earthquake relief operations, 2015
- Volunteer, First Robotics Competition, Waterloo, Canada, 2019
- Emergency First Aid CPR/AED Level C Certification