Karan Singla

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Work Experience

- **Senior Software Developer** at UST Global *Mar 2018 - Jul 2019*
- Software Engineer at Infosys Ltd. *Jul 2017 - Mar 2018*
- Software Engineer Student Intern at Infosys Ltd. *Jan 2017- May 2017*
- Web Developer Summer Intern at Tnine Infotech *Jun 2016 - Jul 2016*

Education

- **Master of Applied Computing** at University of Windsor (UoW) with **GPA: 91** *2019 - Present*
- Bachelor of Technology in Computer Science from Jaypee Institute of Information Technology (JIIT), Noida, India *2013 - 2017*

Skills

- Cloud Services- Microsoft Azure, IBM
- Languages- Python, JavaScript, Java, C/C++, HTML/ CSS
- Frameworks/Libraries- Falcon, Django, React, TensorFlow, Git, Pytest, Docker, Nltk, Pandas, Numpy, BeautifulSoup, Postman
- Databases- Mongo, MySQL
- OS- Windows, Linux
- Interpersonal skills developed through collaboration with team members in an Agile environment
- Leadership and communication skills enhanced with participation in social events, clubs and organizations

Projects

1. **Admin Controlled Chatbot using Chat:** A chatbot to help international students with information regarding programs, courses, life etc. at University of Windsor. The bot is admin controlled and admin can make any changes to the bot using a secret key through the chat panel itself. *UoW*
   - Used IBM Watson for creating the bot
   - Used Django, Python framework to handle the webhook API calls and CRUD operations on the chatbot
   - Application hosted on cloud using Azure App service.
2. **Web Search Engine:** A search engine based on the data collected using web crawling. *UoW*
   - Inverted index using Trie and Hashmap
   - Ranking of web pages using Quick select algorithm
   - Auto-completion using Trie and spell check using Edit distance algorithm
3. **Characters Recognition using ANN and Tensorflow:** A self-learning project to gain a better understanding of tensorflow and neural networks. *UoW*
   - Used EMNIST-ByClass dataset
   - Building, saving and loading the neural network model with adam optimizer function
   - Used OpenCV to preprocess the user image and to segment the multiple characters present in the image
4. **Intelligent Computing Environment (ICE):** UST's machine learning and artificial intelligence platform. *UST Global*
   - Working on ICE Named Entity Recognition
   - Identification, design and implementation of the new features for the new releases
   - Integration of mitie, crf, spacy, corenlp models for default and custom entity recognition, involving tagging, training, predicting, pos tagging
   - Using Python framework Falcon with mongo db to create all the RESTful services, in an Agile-scrum environment
   - Building Docker containers for the application and sonar test coverage
5. **Anthem Virtual Assistant (POC):** A chat-bot for the healthcare giant Anthem to answer user queries regarding insurance plan & coverage details. *UST Global*
   - Parsing pdf documents to html for benefits/coverage details extraction in a structured format

- Used Rasa natural language understanding (NLU) to extract intents and entities
- Used Rasa Core for writing stories, training the dialog model, creating actions based on intents
- Used python framework Anaconda with mongodb, in an Agile-scrum environment

6. **Credit card fraud detection:** A self-learning project for exploring machine learning.
   - Used Kaggle credit card fraud dataset, support vector machine as the classifier
   - Achieved a 96% accuracy after data pre-processing, data visualization, training dataset balancing
   - Implemented in python on Jupyter-notebook
7. **Spam detection:** A self-learning project for exploring machine learning.
   - Used Kaggle spambase dataset, Multinomial and Gaussian Naïve Bayes as the classifier
   - Achieved 88% accuracy for Multinomial and 81% accuracy for Gaussian
   - Implemented in Python using Jupyter-notebook
8. **CrypChat**: A bot to answer queries with respect to weather. *Infosys*
   - Implemented Vignere, RSA, Transposition algorithms for encryption
   - Trained the model for different entities like location, time with intent to either greet or ask weather
   - Used Python, Rasa stack, in an Agile-scrum environment
9. **Recommendation for gray-sheep users**: Recommendation for those users who do not have any similarity with the other users. *JIIT*
   - Read various research papers to gather knowledge about gray-sheep users
   - Used Collaborative filtering techniques to recommend movies efficiently to gray-sheep users
   - Found correlation , level of similarity with other users using python numpy, scipy
   - Used python libraries like numpy, scipy, matplotlib

Certifications

- Earned **Microsoft Certified Solutions Associate** (MCSA) credential
- "Natural Language Processing with Python for Machine Learning" - LinkedIn Learning
- "Introduction to TensorFlow for Artificial Intelligence, Machine Learning and Deep Learning" - Coursera
- "Understanding Machine Learning with Python" and "Getting started with Natural Language Processing with Python" - Pluralsight
- "Building React and Django Apps" - LinkedIn

Achievements

- **Graduate Student Representative** for School of Computer Science at University of Windsor
- Student Branch member of Institute of Electrical and Electronics Engineers (IEEE)
- Won gold medal in volleyball Fun Sports Meet competition at JIIT
- Member of Knuth Programming Hub at JIIT
- Head boy and house captain during secondary school

Campus and Community Involvement

- Participated in national level Code To Win competition
- Volunteered for Community Clean Up event at University of Windsor
- Graduate Student Society(GSS) and Indian Students Association(ISA) volunteer
- Volunteer in raising funds for Kerala flood victims at UST and raised $10000
- Volunteer in organizing events with NGO Saksham at Raahgiri for blind children
- Hospitality team member at International Conference on Contemporary Computing held at JIIT

References

Available upon request.