AMIT KUMAR

1204 West Adams Blvd #27, Los Angeles, CA - 90007
Contact No.: +1 (213) 322-8409, E-mail: kuma310@usc.edu
Github: https://github.com/amitasviper LinkedIn : https://www.linkedin.com/in/amitasviper/
Website: https://amitasviper.com

ACADEMIC QUALIFICATION

University of Southern California, Los Angeles Dec 2019
Masters of Science - Computer Science (Data Science)

Army Institute of Technology, **Pune** May 2016
Bachelor of Engineering (Computer Science and Engineering), Percentage – 68.9%
12th Grade, Kendriya Vidyalaya, Percentage - 90.2% March 2011

WORK EXPERIENCE

1. MavenHive Technologies Pvt. Ltd., Bangalore Jan – Dec 2017
Associate Engineer

- Full Stack Developer
- Worked on Python, Ruby on Rails, ReactJs
- Created a slack application which intelligently suggests about the upcoming tech conferences in a particular region.

2. Commvault Systems, Hyderabad
Associate Engineer July 2016 – Jan 2017

- Developed modules in the windows installer of their product, Simpana using Python and C#.

INTERNSHIP

1. Commvault Systems, Hyderabad Dec 2016 – Feb 2017

- Developed python scripts to automate the packaging of the installation files.

2. GS Labs, Pune Aug – Dec 2015

- Learnt about Docker and its benefits over legacy VM systems
- Created a central Docker Health Monitoring system and published a research paper on it.
- Technologies used : Python, Flask, Socket-IO MongoDb, HighCharts, Javascript, HTML

RESEARCH PROJECTS

Title: Motion Detection (Image Processing) Feb – Apr 2014
Army Institute of Technology, Pune

- Aimed at detecting motion in a live video stream and isolating the moving subject using OpenCV.
- Worked on cv2 python module of OpenCV and used Gaussian Blur, Contour Detection, Canny Edge Detection, Color Space Conversion, Thresholding, Erode and Dilate.
- Github Repo Link : https://github.com/amitasviper/MotionDetection

Title: Wet Soil Water Content Estimation Using OpenCV (Image Processing)
Army Institute of Technology, Pune Jun - Aug 2014

- This project was a submodule of another project aimed for “Smart Irrigation Sensor”.
- Used Python and OpenCV to detect the moisture content by taking the soil image and performing operations like convert to grayscale, thresholding, pixel differentiation, Relative Wet Soil ratio.
- Github Repo Link : https://github.com/amitasviper/WaterContentEstimationInSoil

Title: Classification of Music (Statistical Analysis) Feb – Apr 2014

Army Institute of Technology, Pune

- Aimed at classifying audio files based on statistical similarity between the audio waveforms resulting in an image categorising similar songs.
- Used python's scikit-learn and R programming for feature extraction and representation.
- Github Repo Link : https://github.com/amitasviper/AudioClassification

Title: Secure Logging-as-a-Service in Cloud Dec 2015

- A system to maintain the confidentiality and integrity of the logs generated by virtual machines in a cloud thereby incapacitating the cloud service providers from counterfeiting them.
- Used Bloom-filters accumulator scheme and hash-chain mechanism to verify integrity of logs.
- Github Repo Link : https://github.com/amitasviper/SecureLogging

Title: Mobile Banking Authentication System (using Steganography) July – Oct 2015

Army Institute of Technology, Pune

- Aimed at enhancing security in the communication between the client and bank systems using steganography techniques such as LSB, SLSB and Random Bit selected randomly at runtime to embed data into the image.

Title: Wireless Robot (Hardware and Android) Feb – Apr 2014

Army Institute of Technology, Pune

- Aimed at controlling a raspberry pi powered ground robot over wifi though an android application.

Title: Resource Monitoring of Docker Containers (Restful API) Jan – Apr 2015

GS Labs, Pune

- Developed a centralized resource monitoring system for analyzing the performance of docker containers based on Docker Swarm APIs.
- It monitored CPU Usage, memory utilization, number of requests encountered, number of http errors and send alerts if a docker container's resource was being overused.
- Github Repo Link : https://github.com/amitasviper/DockerMonitoring

COURSES AND WORKSHOP

- Taken courses on OpenCV, R Programming and CUDA programming.
- Ethical Hacking Workshop: Learnt about the possible vulnerabilities and backdoors in windows systems and websites and about using Linux Kali for penetration testing and network hacking. Created custom keyloggers using Python.
- Windows App Development: Undertaken training on Windows App Development by Microsoft.

AWARDS AND ACHIEVEMENTS

- Published a research paper on Resource Monitoring Of Docker Containers in the International Journal Of Engineering Development And Research.
- Received scholarship for all 4 years of my Undergraduation for performing well in the university exams.
- Served as a Teaching Assistant for subjects 'Data Structures', 'Object Oriented Programming' and 'Networking Fundamentals'.
- AWES Merit Scholarship for securing 90.8% in the 10^{th} grade.

TECHNICAL SKILLS

- Programming Languages: Python, R, Java, Android, Ruby On Rails, Javascript, ReactJS, C/C++
- Python Modules: OpenCV, Flask, TensorFlow, Scikit-learn, matplotlib, numpy, scipy, flask
- Microcontrollers: Raspberry Pi, Beaglebone Black, CC3D Flight Controller
- Operating System: Mac OS X, Ubuntu, Linux Kali, Raspbian, Windows
- Other Tools: Jupyter notebooks

EXTRACURRICULAR ACTIVITIES

- Developed 9 apps published on Google Play Store summing up to a total of more than 400000 downloads.(Link: https://play.google.com/store/apps/developer?id=AppRadar)
- Participated in hackathons organised by Commvault in 2016 and Microsoft in 2013.
- Served as the Placement Representative for the Computer Engineering department.