

# SUSHIL KHAIRNAR

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## EDUCATION

- **Virginia Tech, Blacksburg, VA** (Expected - May 2023)  
Masters, Computer Science
  - **Pune Institute of Computer Technology, Pune, India** (Jun 2018)  
Bachelor of Engineering, Electronics and Telecommunication ( GPA - 3.9/4)
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## TECHNICAL SKILLS

- *Languages* : Python, Java, C, BASH, SQL, HTML5
  - *Operating Systems* : Linux, Mac, Windows
  - *Technologies and skills* : Data Science, Hive, Flask, RESTAPI, Jira, Git, Confluence, Data Structures and Algorithms
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## PROFESSIONAL EXPERIENCE

### Credit Suisse

Pune, India (Jul 2018 - Jun 2021)

#### Software Developer

- **Market Condition Prediction**
    - Prediction of absolute spread and volume of FX Market for T+5, T+10 and T+15 minutes
    - Analyzed the market data and built a data pipeline for real-time and historical feature generation
    - Reduced data latency by 40% by integrating scheduler and multi-processing in the feature engineering code
  - **Venue Based Monitoring System for APAC Market**
    - Designed a fully config driven monitoring system that monitors data for major APAC stock exchanges.
    - Collaborated with an interdisciplinary team of developers and business analysts for designing a robust monitoring system.
    - Reduced the false production alerts by 60% and CPU usage by 30%
  - **Python Automation Module to on-board data**
    - Independently developed a config-driven recon framework, which on-boards the fields from the AGORA database using API calls and generates a config file to run the data collectors
    - Decreased the data on-boarding time by 30% and reduced manual errors by 40% by automating the data onboarding process
  - **Data Ingestion Framework**
    - Built data pipelines consisting of 3 stages: Staging (ingestion stage), Intermediate (partitioning and bucketing) and Transformation (based on mathematical calculations on the data )
    - Wrote shell scripts for data ingestion and complex SQL queries for data transformation
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## RESEARCH

- **A Light Weight Cryptographic Solution for 6LoWPAN Protocol Stack** Pune, India (May 2018)
    - [Research paper](#) presented at Computing Conference 2018 London and published by Springer
    - It presents an implementation of a lightweight 6LoWPAN protocol stack by using a lightweight cipher
    - The proposed lightweight cipher needs only 1856 bytes of FLASH memory and 1272 bytes of RAM
    - This paper also discusses the detailed analysis of cipher against linear cryptanalysis, differential cryptanalysis, biclique attack and avalanche attack
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## PROJECTS

- **Ecommerce Application using Microservices** (Feb 2021)  
Developed an e-commerce application using micro-service architecture and deployed the project using docker containers
  - **WhatsApp Chat Analytics** (Jan 2021)  
Analyzed whatsapp chat messages and generated valuable insights and patterns from the text messages
  - **Smart Grid** (Nov 2020)  
Predicted the total power consumption in a specific year of the U.S. states. Random forest regression algorithm was chosen for continuous dataset and Flask framework was used for web development
  - **Notification Sender** (Sep 2020)  
Used Google Maps Platform's Distance Matrix API to calculate commute time, and when there's too much traffic, the system sends an automatic SMS and email notification about the traffic status to a colleague
  - **DONOR-X** (Apr 2018)  
An android and website based platform for connecting organ and blood donors with recipients. Worked on Android app Development for mobile application on the front end
  - **Real Time Singer Recognition** (Apr 2017)  
To identify the singer of a song and then cluster songs of similar voices in a music library. Worked on extracting energy, MFCC and pitch from audio samples
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## ACHIEVEMENTS AND AWARDS

Received Award of Merit for securing 3rd rank in the department of 240 students at Pune Institute of Computer Technology  
Selected as a finalist at the Paytm BuildForIndia national level social innovation competition for the project 'Donor-X'  
Awarded 1<sup>st</sup> price in Fast Coding Challenge competition at Credit Suisse

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