

## EDUCATION

**Purdue University***Master of Science in Electrical and Computer Engineering; CGPA: 4.00*

West Lafayette, IN

*Aug. 2021 – Dec. 2022***Carnegie Mellon University***Master of Science in Electrical and Computer Engineering; CGPA: 3.50*

Pittsburgh, PA

*May 2020 – Aug. 2020***Manipal Institute of Technology***BTech in Electronics and Communications, Minor in Signal Processing; CGPA: 3.96 (9.27/10)*

Karnataka, India

*July 2015 – May 2019*

## RELEVANT COURSEWORK

Deep learning, Intro to Deep Learning, Image and Video Processing, Intro to ML for Engineers, Advanced Digital Signal Processing, Elements of Stochastic Processes, Data Structures and Algorithms, Linux and Shell Scripting, Linear Algebra, Probability and Statistical Applications

## TECHNICAL SKILLS

**Programming:** Python, C++, R, Java, Linux, *Backend design* (flask, MongoDB, SQL, Apache-Tomcat, Redis), *Data Science and ML* (PyTorch, Tensorflow, Scikit-learn, NumPy, SciPy, Pandas), *Data Visualization* (seaborn, matplotlib), *Image Processing* (OpenCV, PIL, Scikit-Image), *NLP* (NLTK, Gensim, TextBlob, spaCy)

**Softwares:** MATLAB, Statistica, MariaDB, AFL++, Robo 3T, TesseractOCR, Proteus Design Suite

**Developer Tools:** Git, Docker, Google Cloud Platform, Microsoft Azure, PyCharm, Jupyter Notebooks, Eclipse

## EXPERIENCE

**Project Engineer***Wipro Holmes*

July 2019 – July 2021

*Pune, India*

- Extensive experience in Analysis, Design, Development, and Implementation of applications with thorough hands-on experience on **flask framework**, **MVC architecture**, **Apache-Tomcat**, **MongoDB**, and **SQL**.
- Developed an authentication module by processing healthcare client's employee ID card images using **OpenCV**, **SQL** and **Tesseract OCR** with a **27%** improved accuracy over the previous solution.
- Designed a form recognition module using OpenCV, and **Azure Form Recognizer** cognitive service to automate claim review process.
- Worked on virtual call auditor platform to automate the audit of customer-service rep transcripts using flask, MongoDB, **spaCy**, and **fastText AI** for effective analysis of customer sentiment and experience, which improved the call audit efficiency by **70%**.

**Research Intern***National Institute of Technology*

May 2018 – July 2018

*Rourkela, India*

- Designed an algorithm to extract RR intervals from the ECG signals, and applied concepts of recurrence analysis on each menstrual phase data to find statistically significant features via statistical tests and decision tree strategies.
- Developed **neural nets** with algorithms such as **Levenberg–Marquardt**, **ADAM** in MATLAB to correlate cardiac activity and smoking.

**Data Analytics Intern***Indian Institute of Management*

June 2017 – July 2017

*Lucknow, India*

- Analysed three Harvard Business Publishing cases: '**A Dean's Dilemma: Selection of Students for the MBA Program**,' '**MBA Starting Salaries**' and '**Store24 (A): Managing Employee Retention**,' and made an empirical study of hotel room pricing across 42 cities in India by formulating various hypotheses and building multiple regression models to conclude on the essential factors effecting room price.

## PROJECTS

**Implementing Collaborative Fuzzing Infrastructure for GitHub Classrooms**

Jan. 2022 – May 2022

- Led a team of four students to integrate security education into programming courses by developing frameworks to use existing tools.
- Programmed a collaborative fuzzing framework to perform automated testing of advanced C++ programming course submissions by leveraging the parallel mode of **AFL++** and **Python**, and integrated the framework into **Github Workflows**.

**Understanding the Cardiac Autonomic Regulation of female Smokers and Non-smokers**

Jan. 2019 – May 2019

- Built **ARMA** models with multiple orders ranging from 4 to 9 on RRI data, and performed Empirical Mode Decomposition (EMD) to extract Intrinsic Mode Functions (IMFs) for each RRI signal.
- Implemented neural nets with algorithms such as **BFGS**, **RMSPProp** to solve the classification task with the ARMA and EMD features.
- Performed comparison analysis of three methods (Recurrence Analysis, ARMA, and EMD) to conclude on the suitability of each technique across different menstrual phases, and their implications on Cardiac Autonomic Regulation.

## CONFERENCE PROCEEDINGS

Guntur.A., Tarafdar.K., et.al., (2018), Recurrence Quantification Analysis of RR Interval Signals of Female Smokers and Non-smokers during Different Phases of Menstrual Cycle. IEEE INDICON, 2018 - Chennai, India.