Mathew Varghese

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[/mathewvarghesemanu](https://github.com/mathewvarghesemanu)

[mathewvarghese.space](http://mathewvarghese.space/)

# EDUCATION

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| **Masters- Electrical Engineering** | **University of Washington, Seattle** | 3.92/4 | Aug 2021 - present |
| **Post-Graduate Program** | **Plaksha Tech Leaders Fellowship (ML)** | 3.68/4 | Aug 2020- Jul 2021 |
| **BTech- Electronics and Communication Engineering** | APJ Abdul Kalam Kerala Technological University | 8.31/10 | Jun 2015-July 2019 |

# EXPERIENCE

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| **Machine Learning Intern** | **Tupl inc.** | Jan 2022 – Jun 2022 |
| * Working on machine learning drift and retraining modules on Kubernetes clusters using active learning in scikit learn and TensorFlow. Created visualizations to denote vital parameters of the machine learning models using streamlit. | | |
| **Data Engineering intern** | **HRS** | Apr 2021 – May 2021 |
| * Developed and productionized **data anonymization** of hotel booking data for **GDPR** compliance using AWS Lambda, Kinesis firehose, S3, DynamoDB, AWS Glue and spark. Led a team of four in setting up an **ETL Pipeline using AWS Glue**. Achieved Business milestone by implementing a **data privacy pipeline** affecting **100% of input data** | | |
| **Founder and Managing Partner** | **Veil Healthcare Solutions, Kerala** | Mar 2020 – Sep 2020 |
| * Designed and manufactured electronic sanitizer dispensers and **150k**+ units of injection molded face shields for corona relief in a time span of **6 months** which netted business revenue of $**67k+**. Managed **team of 15**, developed company website and ran Facebook ad campaigns. | | |
| **Co-Founder and CTO** | **Cypher, Kerala** | Mar 2016 – Sep 2020 |
| * Provided rapid prototyping services to 50+ customers and completed more than 3000 hrs. of 3d printing, assisted 20+ academic projects, developed IoT products and raised seed fund for a SaaS based student portfolio management software from **Kerala Startup Mission**, incubated under **SV.CO SaaS** **startup school** and **Pitched idea at Facebook HQ, California**. | | |
| **Fablab & IoT Lab student in charge** | **Mar Athanasius College of Engineering** | Jun 2017 – Dec 2018 |
| * Maintained rapid prototyping machines including 3d printers, laser cutters and CNC machines. Promoted digital fabrication and web development via workshops and guided projects. Built a **website for calculating cost** of digital fabrication. Led a team of 3 in developing faculty connect application and **payment gateway**. | | |

# PROJECTS

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| **3D printing time estimation using Machine Learning** | Jan 2020 – Apr 2021 |
| * Scraped thingiverse for 30k STL files, estimated parameters, sliced them to gcode using multithreading and build a model to estimate the print time of 3d model under RMSE of 27 and built a cost predictor. | |
| **Server load Prediction** | Jan 2020 – Feb 2021 |
| * Server load prediction on dataset containing details of various aspects of a web server running a variety of different software applications using model selection and hyperparameter tuning. Obtained 0.2047 log loss. | |
| **Intelligent Scarecrow** | Nov 2021 – Dec 2021 |
| * Developed a smart device to detect elephants using Resnet-18 , play deterrent bee sounds and alert farmers using telegram on a Raspberry pi 4 running PyTorch & OpenCV, Compared performance of popular backbone networks. | |
| **Drug discovery using VAE** | Dec 2020 – Feb 2021 |
| * Developed a jupyter notebook to generate SMILES strings corresponding to new molecules based on the ZINC database using a Variational Auto Encoder. | |
| **Activity tracker** | Dec 2020 – Feb 2021 |
| * Designed an activity tracker cube to increase productivity and manage **work life balance**. Conducted user interviews, identified pain points of remote workers, and iteratively improved the product. Developed flutter app, ESP32 based IoT board & flask API with an SQL database running on Linux server. | |

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| SKILLS |

PyTorch, OpenCV, TensorFlow, Keras, Scikit Learn, Pandas ,NumPy, Matplotlib, SQL, Python, MS Office, Photoshop, Premiere Pro, CorelDRAW, Postman, 3D modelling, fusion360, Flask, Flutter, WordPress, Arduino, C++

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| ACHIEVEMENTS |

* **Best Outgoing Student** Mar Athanasius College of Engineering Jun 2015 – Jun 2019
* Maker Summit hackathon, 1st prize IIT Madras Feb 2016
* NIT Techathon hackathon, 2nd prize NIT Calicut May 2018
* Participated in 10 hackathons and won prizes in 6 hackathons