Devyani Tushar Maladkar

Indian Institute of Technology, Goa

Fourth Year **Undergraduate, Computer Science and Engineering**
Address: Flat 201, Prajiat Apt. Thorat Colony,
Erandwane, Pune, Maharashtra
E-mail: **devyani.maladkar.18002@iitgoa.ac.in**
yani@maladkar.com
Mobile: **+91-9422029653**
LinkedIn: **www.linkedin.com/in/devyani-maladkar**

Education

BTech, Computer Science and Engineering, Indian Institute of Technology Goa	**9.93** GPA	2018 – present

Experience

MathWorks India Private Limited.
Engineering Development Group Intern in Control Design and Automation Team   [July 2021 - current]
- Worked on developing C++ component for Simulink Calibration Tool.
- Worked with large C++ code base. Involved in writing and testing C++ component.

École Polytechnique Fédérale de Lausanne
Summer@EPFL Intern in Intelligent Global Health, Machine Learning and Optimisation Lab   [June 2021 – Sept 2021]
- Worked on understanding and developing contrasting learning approaches for COVID-19 diagnosis using Lung Ultrasound Videos.
- Analysed and designed experiments for using Lung Ultrasound Videos in contrastive learning settings for COVID diagnosis.
- Performed extensive study of self-supervised approaches and detailed literature review. Worked with Python VISSL library for pre-training and wrote Python code with PyTorch framework for designed experiments and analysis.

Indian Academy of Science Fellowship: Indian Institute of Technology Bombay
Research Intern under the guidance of Prof. J Adinarayana   [Aug 2020 - Sept 2020]
- Worked with an interdisciplinary team at the Agroinformatics lab at IIT Bombay,on developing a visualisation tool for geo-spatial analysis.
- Worked on designing and building visualisation platform for drone-sensing outputs using OpenLayers javascript Library and performed back-end analysis using Python. The platform was developed to be user friendly for scientists and interactive for more flexibility in visualisation and analysis of the agriculture data.

Indian Institute of Technology Roorkee
Research Intern under the guidance of Dr. Peddoju Sateesh Kumar.   [May 2020 – July 2020]
- Worked on developing an Android Malware Classification approach for recognising android malware from benign ware.
- The work involved detailed paper review and review of past techniques.
- Worked on several novel approaches for data processing and handling. Developed multiple classification approaches for malware detection using machine learning techniques.
- Python script and web-harvesting tools were also written for dataset preparation tasks.

Saviant Consultancy, Pune.
Machine Learning Intern.   [Dec 2019]
- Developed Machine Learning approach for Predictive Maintenance of Gas-Engine.
- Worked on dataset processing and preparation for gas engine data.

Invention Factory Programme, IIT GANDHINAGAR
Inventor   [Dec 2019]
- Worked on an invention in the field of women's health and hygiene.
- Built a functional prototype and filed for a provisional patent.
- The final work was pitched to a Jury of experts from various fields and the device also received media coverage.

Projects

Measuring Road Mobility from a user's perspective using crowdsourced data
Under the guidance of Prof. Milind Sohoni.   [Dec 2020 – Jan 2021]
- The project was aimed at developing indices which represent the user mobility on Indian roads.
- Data collection using Google APIs and Census and handled using python libraries. Devised calculations for the mobility.
- Generated spacial visualisations using QGIS, published results in the Opinion Section for the Indian Express.

Trash Classifier   [December 2020]
- Worked on the TACO trash image dataset for AI lab term project
- Built the data pipeline and modified the convolutional layers of lightweight object detector SSD 7.
- Dealt with the skew in the dataset by experimenting with different mappings for the classification.

Application of Network Flow Algorithms to Transport System [May 2020]
- Worked in a team of 2 for developing application of network flow algorithms in the Bus Transportation system for Shahapur Taluka.
- Data processing of Bus routes and algorithm application was done using Python libraries - numpy, pandas, NetworkX. Analysis was performed on bus route infrastructure using Network Flow algorithms . The objective was to provide an occupancy analysis for the current bus infrastructure.

Prototype of Mess Management System [Oct 2019 – Nov 2019]
- Worked in a team of 4 to build a Mess crowd monitoring and display system. The system used custom designed logic for clustering of occupied and unoccupied seats. Built the system using Arduino, Ultrasound Sensors, Cyclone FPGA, RFID system.
- The system was designed to store and compute seating configurations for occupied and available seats in the mess. The possible seating configuration and availability for various group sizes are then displayed using LCDs.

Reusable Sanitary Pad Washing Device [May 2019 – June 2019]
- Worked alongside a co-inventor on a one of a kind-"Reusable Sanitary Pad Washing Device". The machine is a mechanical sanitary pad washing device, which uses specially designed diaphragms for the cleansing action.
- Rapid prototyping and designing was done resulting in a functional prototype at the end of 6 weeks.
- Laser Cutting tools,3D printing and modelling software were used for building the prototype.
- **A provisional patent was drafted and filed (in 2019)in India and USA, for the device.**

Skills

Computer Skills	C++, Python,Bash, HTML, Java Script, Java, Latex, MATLAB.
Software Skills	Tensorflow, MATLAB, Jupyter, QGIS, AutoCAD, ROS, Fusion, MS Word, MS Excel, VHDL, Arduino UNO, 3D printing.
Relevant Coursework	Data Structures and Algorithms, Design and Analysis of Algorithms, Discrete Structures, Linear Algebra, Computer Networks, Introduction to Artificial Intelligence, Computer Architecture, Introduction to Machine Learning, Optimisation : Theory and Algorithms, High Dimensional Data Science.
Summer Schools	Vigyan Vidushi Summer School hosted by Tata Institute of Fundamental Research (2021). ACM India Summer School 2021 on Natural language Processing Hosted by IIIT Hyderabad and Sponsored by Microsoft India (2021).

Positions of Responsibility

Institute Innovation Council	Lead of team of student Coordinators and head of Entrepreneurship-Cell	[2020 – 2021]
Developer Student Club	Core Member of Google DSC (Developer Student Club), IIT Goa.	[2019 – 2021]
Teaching Assistant	Selected for Teaching Assistant for Introduction to Computer Programming Course.	[Sep 2019 – Dec 2019]
Student Mentorship Program	Selected to mentor 4 Students.	[2019 – present]
Institute Representative	Delivered a speech on Jugaad Innovation in India at Youth Conclave India's New Blueprint: Come walk the path with the future leaders organized by IMC Chamber of Commerce and Industry's Young Leaders' Forum.	[July 2021]
Country Representative	Represented India as a part of 15 member youth delegation for the BRICS Youth Summit 2021. Delivered a presentation and engaged in discussion on the topic of Youth Engagement.	[Aug 2021]

Achievements

- Topped the course titled HPC Shiksha : Basics of High Performance Computing conducted, in 2020, by National Supercomputing Mission.
- Awarded for Technical Excellence 2018-2019 by the Director of IIT Goa.
- Awarded for Academic Excellence 2018-2019 by the Director of IIT Goa.
- Provisional Patent filed in 2019 for "Reusable Sanitary Pad Washing Device" in India and USA.
- Selected in the All India Top 4 teams for Smart India Hackathon-2019 for problem statement - "Crowdsourcing for the works of Members of Parliament".
- Winner of Novice Champions Title at the IIT BHU Parliamentary Debate 2021 (Varanasi Wordfest - IV edition). Ranked 30th in Individual Debater rankings for the tournament.
- Article published (March 2021) in the Indian Express .
- Awarded AP Grade in 13 courses during 3 years of Bachelors.

Extracurriculars

- Chess Player represented Institute for Inter IIT Sports Meet, 2018.
- Debater represented Institute for Inter IIT Cultural Meet, 2018, IIT Cultural Meet, 2019, BITS Waves 2019, IIT BHU PD 2021.