RUTWIK PALASKAR

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# SUMMARY

Interested in interdisciplinary research combining Machine Learning, Healthcare and Bioengineering.

# EDUCATION

**MIT ADT University, Pune, IN** 2018 - Current B.Tech. Bioengineering 8.38/10

# PUBLICATIONS

1. **Rutwik Palaskar**, Renu Vyas, Vilas Khedekar, Sangeeta Palaskar and Pranjal Sahu, “Transfer Learning for for Oral Cancer Detection using Microscopic Images”, ArXiv
2. Shreyas Patil, Mihir Kulkarni, Shubham Hajare, Tanvi Parkhe, **Rutwik Palaskar**, Diksha Zut- shi, Reema Shyamsunder Shukla, Sameer Desai, “Assistive Device for Hemiplegic Patients”, *3D Printing*, Book Chapter

# PROJECTS

**Shwaas: Social Distance Tracking and Health Monitoring App**

*iBase Electrosoft LLP, Virtual* March 2021

* An App that ensures social distancing during the Covid 19 pandemic where recording a person’s temperature and O2 saturation can be noted by just scanning a QR code.
* Reducing contact and decreasing the chances of the virus spread.
* [Shwaas](https://drive.google.com/file/d/1AzayjPuLdipffKeOhFLc0ins0V32_nKM/view?usp=sharing)

# Transfer Learning for Oral Cancer Detection using Microscopic Images

*Research Assistant, MIT ADT University* Oct 2020

* Worked with doctors at a hospital in Pune to collect one of the first datasets of microscopic images for oral cancer detection
* Applied current state-of-the-art models of transfer learning for image classification
* [Technical Report](https://arxiv.org/pdf/2011.11610.pdf)

# Predicting Urinary Incontinence in Elderly

*Medhacks Hackathon, Johns Hopkins School of Medicine* Oct 2020

* <https://devpost.com/software/sneakpeakintoleak>
* Built an assistive technology for the elderly to predict urinary incontinence

# Collection and Utilization of Single-Use Plastics and Various Other Industrial Wastes

*Smart India Hackathon* Oct 2019 - Jul 2020

* Built a sustainable solid waste management system
* Developed an online B2B e-commerce service for buying and selling of single-use plastics and various types of industrial wastes
* Developed machine learning algorithms for real-time waste classification to segregate waste.
* Represented my university in this national-level hackathon

# Advanced Arduino

*Venture Centre, Pune* Oct 2019

* Worked with multiple sensors and output devices

# INTERNSHIPS

**University of Pennsylvania** *Intern* June 2021 – Current

- Kidney and Kidney Tumor Segmentation

- To train machine learning models for accurately performing semantic segmentation of kidneys, renal tumors and cyst in CT imaging data.

- Automating the process of identifying kidney tumors and saving time and effort of radiologists and surgeons.

**Stony Brook University** *Part-Time Intern* Oct 2020 – May 2021

- Cardiac Image Segmentation for generalization over multi-site data using histogram matching augmentation.

- Extending histogram matching augmentation for generalization of machine learning models for Oral Cancer Detection.

**Prosthocentric** *Part-Time Intern* Nov 2019 - May 2020

* Currently developing hardware designs and blueprints for the start-up’s patented dental products [https://prosthocentric.com](https://prosthocentric.com/)
* Prosthocentric develops and builds automated temporomandibular jaw-relation records to aid and assist dentists in designing dentures.

**Tech Smart Systems** *Data Science Intern* Mar 2019 - Apr 2019

* Trained machine learning models for classification and regression tasks on in-house housing prices dataset.
* Applied data pre-processing and machine learning techniques on real-life housing prices data.
* Learned about Pandas, NumPy, Matplotlib, and Sci-Kit learn libraries in Python.

# SKILLS

**Platforms** TensorFlow, PyTorch, Keras, Arduino, Django, Flask, Web Development

**Programming Languages** Python, Java, C, C++, HTML, CSS

# RELEVANT COURSES

**MIT ADT** C, Java, Advanced Java, Machine Learning, Python, Data Mining and Warehousing, Microcontrollers and Bioelectronics, Electrical engineering, Electronics, Genomics, Microbiology, Bio- statistics, Genetics, Molecular Biology, Biochemistry, Biochemical Engineering

**MOOCs** Machine Learning (Andrew Ng, Coursera, Stanford University), Machine Learning A-Z: Hands-on Python and R in Data Science (Udemy), C programming for beginners - Master the C Language (Udemy), Deep Learning A-Z (Udemy), TensorFlow 2.0 (Udemy), Python Programming Master Class (Udemy), Full Stack Django Web Dev (Udemy)

# HONORS

**Smart India Hackathon, Finalist** 2020

**Class Representative** 2019-2020

A mediator between students and teachers and communicating student welfare issues to the department administration.

# OUTREACH

**Fundraising Team Lead** Odser NGO, Pune

**Sambandh Project Co-ordinator** Prem Niwas Old Age Home, Pune

# SPORTS

Represented my school at the State level in football and basketball and also our Bioengineering department at Inter-College competitions in football, basketball, and table tennis.