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Education

Bachelor of Engineering	Electronics & Telecommunication Engineering	2014–2018
Savitribai Phule Pune University	Grade: 75.66% (First Class with Distinction)	

Experience

Persistent Systems Ltd.	<i>Software Engineer</i>	March 2019 – Present
	<i>Intern</i>	July 2018 – March 2019
- Research Projects in Deep Learning for Biomedical Imaging.		
StomatoBot Technologies Pvt. Ltd.	<i>Machine Learning Intern</i>	June 2017 – August 2017
- Convolutional Neural Networks for recognizing type of vehicles from CCTV video.		
- Dataset creation, model training, code integration into existing platform.		

Publications

- [1] Kulhalli, R. *, Savadikar, C. *, Garware, B.: “A Hierarchical Approach to Skin Lesion Classification.” Proceedings of the ACM India Joint International Conference on Data Science and Management of Data, 2019. DOI: <https://doi.org/10.1145/3297001.3297033> [*Indicates equal contribution]
- [2] Savadikar, C., Tahvilian, S. Baden, L., Reed, R., Leventon, D., Pagano, P., Garware, B.: “Towards Designing Accurate FISH Probe Detection using 3D U-Nets on Microscopic Blood Cell Images.” Proceedings of the ACM India Joint International Conference on Data Science and Management of Data, 2020. DOI: <https://doi.org/10.1145/3371158.3371201>

Projects

Tumour Cell Detection [2]	March 2019 – Present
- Identification of tumour cells from microscopic blood cell images, with very high class imbalance (only ~0.064% of the total cells are tumour cells). Cells are classified by segmenting and counting chromosomes in a cell.	
- Achieved 94.72% recall (an improvement over 72.9% recall of the existing system) and 62.88% reduction in false positives.	
- Current role: Robust models for segmentation, Developing code for efficient, on-demand processing of ~70GB image data using 4 Deep Learning segmentation models running parallelly by leveraging multiprocessing and multi-GPU parallelism.	
Skin Lesion Classification: ISIC Challenge 2019	June 2019 – Aug 2019
- Experimented with Variational Autoencoder and Conditional Generative Adversarial Network for detection of out-of-sample images.	
Interpretable Machine Learning in Healthcare	Feb 2019 – March 2019
- Implemented gradient based explanation techniques for Deep Learning models for Biomedical Image Classification, with comparative study on Malaria and Pneumonia classification datasets (Kaggle).	
Skin Lesion Classification using Hierarchical Classifiers [1]	July 2018 – Aug 2018
- Work done towards ISIC 2018: Skin Lesion Analysis Towards Melanoma Detection, an international competition.	
- Along with colleagues at Persistent Systems Ltd., trained Hierarchical classifiers (Convolutional Neural Networks) for classification of skin lesion images into different disease categories to counter class imbalance.	
- Ranked 80th out of 140 participating teams internationally.	
Service Contract Renewal Analysis	Sept 2018 – Nov 2018
- Analysis of Service Contract Renewals for a Fortune 500 company.	
- Created Data Visualizations and trained Machine Learning models for predicting service contract renewals.	

Undergraduate Projects

Final Year Project: Deep Learning Based Music Emotion Recognition	Aug 2017 – May 2018
- Recognition of emotion in music using stacked Convolutional and Recurrent Neural Networks, and Mel Frequency Cepstral Coefficients.	
- Developed a browser-based music player to recommend songs denoting the closest emotion to a chosen song.	
ADSR Parameter calculation	Aug 2016 – Jan 2017
- Work done as a research assistant under Prof. Minakshi Atre.	
- Developed MATLAB codes for the calculation of ADSR parameters for modeling of acoustic guitar.	

6th Semester Short Project: Mini Self-Driving Car

Dec 2016 – Mar 2017

- Trained a small robot-car to navigate in a static environment using images captured by a mobile phone on-board.
 - Images transmitted to a server in a local network through WiFi, which autonomously controlled the robot.
 - Multilayer Perceptron used for controlling the robot using the captured images.
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Technical Skills

Programming Python, MATLAB, C, C++

Tools Git, NumPy, PyTorch, Keras, OpenCV, Scikit-Learn, Pandas, Flask (micro web framework)

Online Courses (Certifications)

- Machine Learning (Coursera) [<https://coursera.org/share/1f7db9d46848e0eab512271a80fba4cd>]
 - Neural Networks for Machine Learning (Coursera) [<https://coursera.org/share/a3a1c56dd26fef845587e7f4c2d2e442>]
 - Convolutional Neural Networks for Visual Recognition (Stanford University)
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Co-Curricular Activities

Robocon

June 2015 – Mar 2016

- Part of the college team which participated in national level Robocon, a competition in which colleges compete to build robots for solving various tasks.
- Developed algorithms for autonomous line-following on multi-coloured background in varying lighting conditions.
- The algorithms were robust to varying lighting conditions and sudden changes in physical conditions such as motion, speed and surface inclination.