

ONKAR LITAKE

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EDUCATION

Pune Institute of Computer Technology

Pune, India

Bachelor of Engineering - Computer Engineering; **GPA: 9.7**

July 2018 - Present

Courses: Operating Systems, Object Oriented Programming, Data Structures & Algorithms, Computer Organization and Architecture, Theory of Computation, Database Management System, Software Engineering & Project Management, Computational Statistics, Artificial Intelligence, Machine Learning, Networking

P. JOG Junior College

Pune, India

H.S.C. - Science; **Percentage: 82.7**

June 2016 - May 2018

Courses: Physics, Chemistry, Mathematics, Computer Science

RESEARCH EXPERIENCE

Undergraduate Research Assistant

Pune Institute of Computer Technology

Pune, India

Advisor: Dipali Kadam

July 2020 – Present

Problem Statement- Neural Machine Translation on Indian Languages

- Trained various models on low computational settings and documented the results in a paper which got published in International Journal of Natural Language Computing (IJNLC).
- Trained various models to evaluate the dependence of multilingual translation models on lexical similarity. Currently working on writing the manuscript for the same.
- Building a novel system to translate sentences from regional Indian languages to foreign languages using Zero Shot Translation.

Advisor: Rajesh Ingle

March 2021 – Present

Problem Statement- Calculating dimensions of 3D Objects from it's 2D images using Deep Learning Method

- Experimented on Vision Transformers, Monocular Depth Estimation, 3D Reconstruction and Object Detection
- Compared Transfer Learning Capabilities of various Vision Transformers and CNNs which resulted in a paper whose manuscript is under revision. It's preprint is available on arXiv.

Project Intern

PICT Linux User Group

Pune, India (remote)

Advisor: Raviraj Joshi

July 2021 – Present

Problem Statement- Named Entity Recognition on Indian Languages

- Implemented different architectures for Named Entity Recognition(NER) on Indian languages.
- Working on documenting the results for publication.
- Working on creation of NER dataset for Marathi language. The aim is to annotate 25,000 sentences in total.

Research Associate

d.Kraddt(IIIT-D)

Delhi, India (remote)

Advisor: Debarka Sengupta

May 2021 – Sep 2021

- Worked on building a closed domain Question and Answering(QnA) model using haystack to answer queries based on various topics like Machine Learning, Data Science, NLP
- Integrated the QnA System with Discord application.
- Implemented Deep Retriever and voice-to-voice sub system using AWS and Azure.
- Implemented system for captioning & voice-over videos from English to multiple languages.

INTERNSHIP EXPERIENCE

Machine Learning Intern

Pune, India (remote)

UST Global

May 2021 – August 2021

- Built ARCG: Autobug root cause generator.
- Did Exploratory Data Analysis to find the distribution of the data.
- Summarised textual data and found keywords.
- Building a classification model to determine the severity of the bug.

Data Science Intern

Mumbai, India (remote)

Data Science Wizards

Nov 2020 – Feb 2021

- Worked on chatbots using RASA framework for building:
 - 1) Virtual Assistant Avatar which will make the loan application process relatively easier and less time consuming for the applicants.
 - 2) Lead generation chatbot which will answer the queries of the user visiting the website and redirect them to their desired location, also useful to collect data of the users.
- Did predictive analysis of various datasets provided by clients to build models having accuracy close to 99% using different Machine Learning algorithms & neural networks.

Machine Learning Project Intern

Pune, India (remote)

Centre for Police Research, Pune

Oct 2020 – August 2021

- Built a system to classify and summarize textual data of Daily Crime Reports.

PUBLICATIONS

- Mandke A.*, **Litake O.***, Kadam D.* "*Analyzing Architectures for Neural Machine Translation using Low Computation Resources*" published in International Journal on Natural Language Computing (IJNLC) Vol.10, No.5, October 2021.
(* contributed equally to this study) ([Read here](#))
- Malpure D.*, **Litake O.***, Ingle R. "*Investigating Transfer Learning Capabilities of Vision Transformers and CNNs by Fine-Tuning a Single Trainable Block*" (under revision) arXiv:2110.05270. October 2021.
(* contributed equally to this study) ([Read here](#))
- **Litake O.***, Aditya A.*, Kadam D. "*Evaluating importance of Lexical similarity in Multilingual Translation models*" (manuscript in progress) October 2021
(* contributed equally to this study)
- Nayak S., Kanetkar A., Hirdukar H., Ghotkar A., Sonawne S., **Litake O.** "*Suggesting Relevant Questions for a Query using Statistical Natural Language Processing Technique*" (in review at iConference 2022) October 2021.

PROJECTS

Traffic Management System | Python

Nov 2020

Pune Institute of Computer Technology

- Technologies and Languages used: Python, OpenCV, Tesseract, Django, HTML, CSS, Bootstrap, JS.
- Control Traffic signals according to the density of traffic at a particular signal. Detect vehicles which were stolen by detecting number plates. Finding fastest path to a destination for emergency services like ambulance.

Virtual Queue | Android

Oct 2020

Pune Institute of Computer Technology

- Technologies and Languages used: Android, Java, Firebase
- Virtual Queue serves to eliminate the problem of physical queues to help maintain social distancing, by implementing a user-friendly interface for users to find and join queues easily as well as help in getting the directions to the particular shop and exit the queue at any point of time.
- Our Virtual Queue system allows both customers and vendors to use the app.

SKILLS

Programming: Python, C, C++, Java, JavaScript, HTML, CSS

Frameworks: TensorFlow, Keras, Pytorch, RASA, scikit-learn, OpenCV, Django, Bootstrap

Packages: NumPy, Pandas, NLTK, Matplotlib

Databases: MySQL, MongoDB

Technologies: Machine Learning, Deep Learning, NLP, Computer Vision, Data Analysis, Data Visualization

Libraries: Numpy, Pandas, Matplotlib, NLTK, iNLTK, Gensim, spaCy

MENTORING

Advised student researchers (4 total)

Pune Institute of Computer Technology

- Rahul Tangsali and Aditya Vyawahare, Septmebr 2021-Present. Undergraduate Research Assistants, Topic: Machine Translation by implementing Fnet transformer and back translation method
- Omkar Gokahle and Shantanu Patankar, Septmebr 2021-Present. Undergraduate Research Assistants, Topic: Machine Translation by implementing TransEvolve transformer and simultaneous machine translation method

LEADERSHIP EXPERIENCES

Vice-Chairman

Pune, India

PICT IEEE Student Branch(Technical Club) | website

Nov 2020 – Present

- * Lead a team of 250+ volunteers to organise annual tech fest which witness the largest participation ever of 4000 participants all over the world.
- * Conducted various seminars and guest lectures for students.
- * Conducted tutorials on recent topics to keep students up to date about recent advancements in technology.
- * Building a classification model to determine the severity of the bug.

Secretary

Pune, India

Picto-Social(Social Club) | website

July 2019 – Present

- * visited various orphanages and taught classes to the orphans, such as basic Mathematics and English, which they would need in their day-to-day life.
- * Paid visits to old age homes and spent time and helped the people present there.
- * Conducted career counselling sessions for underprivileged students.
- * Carried out donation drive and raised a fund of 1.15 lakhs INR(\$1537 USD)
- * Organized blood donation cam in which we were successful in collecting 165 liters of blood
- * Carried out an online awareness campaign for tree plantation-successfully planted a total of 508 saplings

SPECIAL CERTIFICATIONS

- * Convolutional Neural Networks by DeepLearning.AI on Coursera
- * Sequence Models DeepLearning.AI on Coursera
- * Neural Networks and Deep Learning DeepLearning.AI on Coursera
- * Improving Deep Neural Networks- Hyperparameter tuning, Regularization and Optimization DeepLearning.AI on Coursera
- * Structuring Machine Learning Projects DeepLearning.AI on Coursera