

Kaunil Dhruv

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EDUCATION

UNIVERSITY OF MUMBAI
BE IN COMPUTER ENGINEERING
Cum. GPA: 3.0

LINKS

Github:// [kaunild](#)
LinkedIn:// [kaunil-dhruv](#)
Facebook Research:// [dhruv-kaunil](#)

COURSEWORK

UNDERGRADUATE

Operating Systems
Artificial Intelligence
Systems Programming
Compiler Construction
Machine Learning

RESEARCH

MACHINE LEARNING

Transfer Learning
Weak and Semi-Supervised Learning
Active Learning

SKILLS

PROGRAMMING

Over 100kloc:
Java • Python • CPP
C • JavaScript • PHP
Over 1000 lines:
Assembly • MatLab • Bash

DEEP LEARNING

Frame Works
Tensorflow • Chainer

WEB DEVELOPEMNT

Front End
AngularJS • ReactJS •
Architectures
M.V.C

APP DEVELOPMENT

Android
React Native
Apache Cordova

EXPERIENCE

INSYLO TECH. SLU - CONTRACT | COMPUTER VISION ENGINEER

March 2018 – June 2018 | Skills : Python • Chainer • OpenNI • Android

- Worked with an energetic and exciting team on Volumetric estimation of Silos using 2D and 3D images.
- R&D of pipeline for producing RGB-D images from RGB image using CV techniques such as Depth From Focus and using Machine Learning.
- Accessing the feasibility of depth sensing cameras (Astra Pro) in real world setting using Android device and Raspberry Pi.

FACEBOOK | SOFTWARE ENGINEERING INTERN + SOFTWARE ENGINEER

September 2016 – Present | Skills : Python • Chainer • CPP • Android

- Worked with Connectivity Labs and mentored by Prof. Ramesh Raskar.
- Researched and implemented a pipeline for Visualization of Learned Features of a CNN based on SGD to **improve model training for SegNet, VGGBn and UResNet architectures.**
- Created Data Annotation tools using Qt5 which was used by a team of GIS Analysts.
- Optimized rendering of 2D vector geometries on an Android App. **This optimization made it possible for the Android Application to be used by low end phones possessed by Delhivery Field Executives.**
- All the codes are open sourced to [facebookresearch/street-address](#)

ISENSES INC. | SOFTWARE ENGINEERING INTERN

Jan 2015 – Jan 2016 | Skills : CPP • OpenCV • Android

- Developed a Machine Learning pipeline for Disguised Face Detection.
- Implemented a SegNet based feature extractor augmented with an SVM Classifier.
- **Entire pipeline was optimized and implemented on a an FPGA and materialized into a product.**

PUBLICATIONS

ROBOCODES: TOWARDS GENERATIVE STREET ADDRESSES FROM SATELLITE IMAGERY | CVPR EV 2017

Connectivity Labs | Facebook

Ilke Demir, Forest Hughes, Aman Raj, Kleovoulos Tsourides, Divyaa Ravichandran, Suryanarayana Murthy, **Kaunil Dhruv**, Sanyam Garg, Jatin Malhotra, Barrett Doo, Grace Kermani, and Ramesh Raskar

GENERATIVE STREET ADDRESSES FROM SATELLITE IMAGERY | ISPRS INTERNATIONAL JOURNAL OF GEO-INFORMATION

Connectivity Labs | Facebook

Ilke Demir, Forest Hughes, Aman Raj, **Kaunil Dhruv**, Suryanarayana Murthy Muddala, Sanyam Garg, Barrett Doo, Ramesh Raskar

RESEARCH EXPERIENCE

LEARNER CENTRIC AFFECT MONITORING SYSTEM | KJSCE

Team : Prof. Kavita Kelkar

Areas : Affective Computing

- eLearning system adaptive to a Student's emotional state. Using student's facial expressions and their keyboard and mouse activity we classify the emotional state of the student into confused, confident, distracted.
- Facial expressions are classified using a Deep Convolutional Neural Network.
- Currently, researching the application of NLP for classifying keyboard and mouse activity.

COBRIX | MICROSOFT IMAGINE KOREA SEMI FINALIST

Team : Dr. Jang Hee I • Giechol Shin

Algorithms : Faster-RCNN • SVM

- Project aimed at developing a Physical Computing Interface for the visually impaired to learn computer programming.
- Built a Machine Learning pipeline to identify objects and their bounding boxes (i.e localization and classification).

PROJECTS

OBJECT DETECTION AND TRACKING

Algorithms : CamShift • SIFT

- Tracking using a combination of CamShift and SIFT algorithms since color based CamShift alone had poor tracking performance in case of complex scenes.

MEDICAL REPORTS DIGITIZER | EXTRAPOLATE A USER'S HEALTH STRAIGHT FROM THEIR MEDICAL REPORTS

Technologies : OpenCV • Android • O.C.R.

- Created an Android Application to scan and digitize a users medical reports.
- Results obtained from OCR of users' reports were then fed into a LSTM based RNN Network to generate summary of users' health.

TEXT SUMMARIZER | GENERATE HEADLINES FROM A CORPUS OF TEXT

Technologies : Chainer • LSTM • Python

- Implementation of the Attentional Encoder-Decoder architecture described in [this](#) paper.
- Explored application of LSTM Networks for NLP.

AWARDS

2017 2nd/100 Place Microsoft Imagine Cup Korea Semi Finals

SOCIETIES

2015 ISTE Web Administrator for KJSCE's Student Chapter

2016 CodeCell Web Administrator for CODECHEF's Student Chapter