

# Anukool Purohit

## Deep Learning Engineer

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🔗 <https://anukoolpurohit.github.io/>

### PROFILE

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Deep Learning engineer with a passion for system design, a background in research and a good grasp of the mathematics behind machine learning.

### PROFESSIONAL EXPERIENCE

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#### Sr. Deep Learning Engineer

02/2022 – present

*Siterecon*

Worked on semantic segmentation.

Responsible for developing the training and inference infrastructure.

Improved model performance from 0.91 to 0.94 iou.

Reduced computational costs by 65%.

#### Software Engineer

09/2019 – 07/2021

*Readink* Ⓢ

Worked on offline OCR using functional data analytics.

Helped develop the data labelling and curation tools.

Implementation of a functional k-means clustering engine in python.

#### Data Scientist

03/2017 – 04/2019

*Kornea Digital* Ⓢ

Leverage data analytics to support customer development, marketing and product management for clients

### EDUCATION

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#### PhD Dropped out

09/2014 – 11/2016

*University of Utah*

Salt Lake City, Utah

#### B-tech Computer Science

09/2009 – 05/2013

*BK Birla Institute of Engineering and Technology, Rajathan Technical University*

Pilani, India

### COURSES

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#### Deep Learning Ⓢ

08/2021

*Nueromatch Academy*

#### Computational Nueroscience

07/2021

*Nueromatch Academy*

#### Deep Learning Ⓢ

12/2018

*DeepLearningAI*

### PROJECTS

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#### Decoding neural activity of handwriting planning in the motor cortex

08/2021

*Nueromatch academy*

We hypothesised that since high dimensional neural activity in human brains can be represented by a small number of latent factors, these latent factors can be used to decode neural activity.

We extract latent factors in the neural data using LFADS (a type of variational auto-encoder), which were then used to predict the BCI output.

## **Investigating the role of the visual word form area during word recognition.**

07/2021

*Nueromatch academy*

Human performance of recognizing a word should degrade with higher word frequency  
We hypothesized that this is due to the visual word form area in the brain failing to identify words that are moving too fast.

We test this hypothesis using fMRI data of a person performing word recognition tasks at different word frequencies. The frequency stimulus signal processed through a hemodynamic response function is encoded using a GLM. The resulting model shows that visual word form area response shows an inverted 'U' shape change with increasing frequency.

## **Extending RRT algorithm for moving obstacles**

12/2014

*University of Utah*

Built a simulated environment for a visual representation of the RRT algorithm in Matlab, where some obstacles moved. At each step of the Path planning algorithm, we calculate the new location of obstacles using a GMM.

## **EKF SLAM**

12/2012

*BKBIET*

Implemented EKF Slam in Matlab on a LegoMindstorm NXT, using its sonar sensor. The Robot successfully navigated semi-structured environments.

# **PROGRAMMING LANGUAGES AND TOOLS**

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## **Programming Languages**

Python, C++

## **Machine Learning stack (for Python)**

Pytorch, Pytorch Lightning, FastAI, Scikit-learn, pandas, NumPy, Opencv, matplotlib, wandb, mlflow, clearml, mlflow, hydra, DVC, ONNX.

## **Backend Development stack**

FastAPI, Flask, Postgres, Kafka, Ray, docker, git.

## **Data tools**

Kafka, Postgres, DVC, pyspark

## **Cloud tools**

GCP, Pub/sub, gcloud-sdk, gcp-sql, AWS, bash scripting