

Anuran Roy

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Skills

Backend Development (Django, Django REST Framework, FastAPI, ExpressJS (learning), Golang (learning), MongoDB, SQLite, PostgreSQL, Oracle SQL (learning) Spring Boot (learning), Spring MVC (learning))

Programming (Python, C/C++, Java (learning), Shell Scripting, R, JavaScript, TypeScript, Go(learning), Julia (learning), Rust(learning).)

Data Science and Visualization (Jupyter, Pandas, Numpy, Matplotlib, Plotly, Seaborn, Scipy, R, Ggplot, Dash (learning), Plots.jl)

Machine/Deep Learning (scikit-learn, PyTorch, Keras, skorch, PyTorch Lightning (learning), fastai (learning), Flux.jl (learning))

Business Analytics/BI (PowerBI (learning)) | **Cloud Services** (Heroku, Glitch, Replit, AWS (learning), GCP (learning))

Data Engineering (Spark (learning), Hadoop (learning)) | **Data Structures and Algorithms** (2* Codechef, Pupil in CodeForces))

Projects

SerPyTor (under development), 09/2022
A low-code data tool (library-cum-framework) for data folks. [🔗](#)

Pymetrix (previously Analyx), 11/2021
An Open Source Plug-n-Play Analytics Python Library with 10+ Github stars [🔗](#)

Im2SQL, Image to SQL Converter [🔗](#) 10/2021

Alucard.ai, CLI Desktop Assistant harnessing the power of 5+ different platforms and serving as a cross-platform bridge on top of base Python. [🔗](#) 08/2021

OpnEco, 07/2021
Content writing suite for writers with 3 modules (Trending on Product Hunt on Jul 28 2021) [🔗](#)

Sentiment Analyzer, Throw in a sentence, get a sentiment! [🔗](#) 12/2022 – 12/2022

Achievements

OpnEco ranked on ProductHunt trending #28, Vosk Blog ranked on at #1 on Google Page 1, 50+ GitHub Stars across repositories, Finalist- Hack-n-Pitch (E-Summit 2021, E-Cell JU)

Experience

Machine Learning Engineering Intern, CloudSEK [🔗](#) 09/2022 – 12/2022 | Remote, India

- Interning in the **Digital Risk Protection** (DRP) department, on the Fake Domain Finder product.
- Created and augmented a dataset for webpage elements, later used by the entire DRP Team.
- Developed an AI model to detect client logos from webpage screenshots, based on state-of-the-art YOLOv7. Improved performance by more than 80% speedup with equal or better inferences than the pre-existing model (results taken from testing phase).
- Worked on a gator model to filter out domain sales pages to speedup the inference pipeline by eliminating false positives by more than 20% (results taken from testing phase).
- Dockerized the said model for testing by the DRP QA team.

Deep Learning Research Mentee, Google DeepMind 06/2022 – present | Remote

- Selected as a mentee under a team of 3 researchers from Google Deepmind, North Carolina State University, and Carnegie Mellon University.
- Researching on **10+** activation functions and their limitations in usecases of Neural Networks.
- Exploring and working on **2** novel activation functions that can overcome limitations of those currently in use.
- Running **5+** tests on the usecases and obtaining performance metrics for the same using **sklearn, PyTorch** and **Flux.jl**.

Backend Development Intern, AI4Bharat [🔗](#) 06/2022 – 09/2022 | Remote, India

- Improved documentation of **10+** backend APIs by tracing them and working with the team on the same.
- Overhauled the quick search functionality by paginating queries and creating **2** advanced query lookups, using **Django, Django Rest Framework** and **PostgreSQL**.
- Conceived the unified search functionality in the Shoonya Ecosystem, that can scale upto a search space of size approximately **1,000,000,000** using **Django, Django Rest Framework** and **PostgreSQL**.
- Performed more than 20 tests, both manual and automated. Found more than 5 bugs using **Pytest**.
- Helped to setup of the CI/CD pipeline of Shoonya Backend with Github actions.
- Worked from prototype to market stage of Shoonya ecosystem, for data processing for NLP models in Indian Languages.
- Created a DSL for search filters to filter results with fine-grained control.

GDC Fellow 2022, Global Digital Corps (with Pupilfirst) [🔗](#) 01/2022 – 05/2022 | Remote, India

- One of the 40 candidates out of 48000+ applicants to get trained in Software Engineering (**JavaScript, Django, Django Rest Framework** and **TypeScript React**).
- One of the 20 to complete training successfully.

AWS Machine Learning Scholarship Program, Udacity 06/2021 – 10/2021 | Remote

- Completed the 3 courses allotted- Deep Learning with PyTorch, Software Design and Development, and Machine Learning on AWS.

Contract developer (Freelance), Haplet 06/2022 – 09/2022 | Remote

- Developed the FastAPI backend with **20+ endpoints** for an MVP of a product (stealth).
- Integrated the backend with a custom-trained model based on YOLOv5 algorithm, to extract data from official documents using text and image detection.
- Created endpoints to mint the extracted data as NFTs by making API calls.
- Created the design document for the same.

Education

B.Tech, CSE with specialization in IoT, Vellore Institute of Technology, Vellore 2020 – 2024 | Vellore, India

Courses

Data Structures and Algorithms, Vellore Institute of Technology	01/2022 – present Vellore, India
Natural Language Processing, Vellore Institute of Technology	08/2021 – 01/2022 Vellore, India
<ul style="list-style-type: none">Developed an NLP Project in Python to recognize voice commands to edit spreadsheets data. Source CodeProject Marks received: 95/100	
Data Visualization, Vellore Institute of Technology	08/2021 – 01/2022 Vellore, India
<ul style="list-style-type: none">Analyzed the Global Terrorism Index for extracting insights.Project Marks received: 82/100	
Object Oriented Programming with C++, Vellore Institute of Technology	02/2021 – 08/2021 Vellore, India
<ul style="list-style-type: none">Implemented a crude, barebones blockchain in C++. Source codeGrade: 'A', Score: 83/100	
Problem Solving and Programming with Python, Vellore Institute of Technology	11/2020 – 02/2021 Vellore, India
<ul style="list-style-type: none">Grade: 'S', Score: 93/100	
Neural Networks and Deep Learning, DeepLearning.ai	08/2022 – 09/2022
Principles of Database Management Systems, Vellore Institute of Technology	07/2021 – 12/2021 Vellore, India

Certificates

[Python \(Basic\)](#) (HackerRank), [SQL \(Basic\)](#) (HackerRank), [Python Proficiency Test](#) (Pluralsight), [Data Visualization](#) (Kaggle), [Data Science with R Programming](#) (Simplilearn), [Introduction to Machine Learning](#) (Kaggle), [Hypothesis Testing](#) (UpGrad), [Introduction to Julia \(for programmers\)](#) , [Neural Networks and Deep Learning](#) (Coursera - DeepLearning.ai)

Publications

Oscillating activation functions and other recent progress in activation functions: A survey, engrXiv	13/06/2022
<ul style="list-style-type: none">Modern neural networks have their fundamental component in the perceptron.A perceptron can represent the basic logic gates, except the XOR gate, popularly referred to as the XOR problem.Recent work have proposed biologically inspired oscillatory functions that solve the XOR problem with a single perceptron.We highlight the shortcomings of existing activation functions with respect to the XOR problem and how oscillating functions can solve them in this paper.	
The Net Disconnect: A Statistical Study on Internet Shutdowns in India, Centre for National Policy Research	07/2021
<ul style="list-style-type: none">Studied the scenario of internet shutdowns in India.Statistically visualized the impact of shutdowns on the GDP of India.Proposed a rough framework of solutions for tackling internet shutdowns.	