SIDDHARTHA DHAR CHOUDHURY

Software Engineer

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🐙 frankhart2017   💼 siddhartha-dhar

EXPERIENCE

Software Engineer
Avalara

📅 July 2020 – Ongoing   📍 Chennai, India

- Worked with deep neural network based natural language processing models like BERT, DistilBERT, GPT (1 and 2).
- Used frameworks like PyTorch and Transformers to train scalable models for taxcode prediction.
- Created APIs using FastAPI for deploying models in Kubernetes clusters.

Research Assistant
BARC-BRNS SRM ML Lab

📅 Aug 2018 – Jul 2020   📍 Chennai, India

- Created convolutional neural network based binary classifier to detect explosives in X-ray scans of baggage.
- Trained object detectiona and semantic segmentation models for refined search of explosives in an image.
- Deployed these models as Flask app in Pynq Z1 and Nvidia Jetson Nano edge boards.

Web Developer
SRM Center for Applied Research in Education (SRM-CARE)

📅 Jun 2017 – Jul 2020   📍 Chennai, India

- Created web applications using PHP and MySQL backend.
- Worked on applications like eLab, eCircuit and eResearch which is used by approximately 20,000 students from various engineering streams across various campuses of SRM IST.
- Worked with CentOS servers to ensure stable deployments of web applications.

Database Administrator
Indian Medical Association, Blood Bank of Uttarakhand

📅 Jun 2017 – Jul 2017   📍 Dehradun, India

- Managed production database in PostgreSQL.
- Learnt about server management using Windows Server 2008.
- Managed internal application containing records of blood donors and availability of various components of blood used within IMA Blood Bank Dehradun, Uttarakhand.

PUBLICATIONS

📄 Journal Articles

- Choudhury, Siddhartha Dhar, Kunal Mehrotra, and D Vanusha (2020). "Imageem: Pre-Trained Encoded Vector Embeddings for Image Modelling". In: *International Journal of Innovative Technology and Exploring Engineering (IJITEE)* 9 (7).

EDUCATION

B.Tech in Computer Science and Engineering
SRM IST Chennai

📅 May 2016 1997 – May 2020

HSC (12th) and SSC (10th)
Kendriya Vidyalaya Pasighat

📅 March 2012 – March 2016

OPEN SOURCE PROJECTS

sim-C
Admin and Maintainer

📅 GNU GPL v3.0

- A dynamically typed high level front end for C. Allows users to write code in high level syntax and this code is compiled to optimized C code.

PyGeneses
Admin and Maintainer

📅 GNU GPL v3.0

- A PyTorch based Deep Reinforcement Learning Framework for simulating complex behaviour in artificial agents in bio-inspired environments.

TemplateBuddy
Admin and Maintainer

📅 GNU GPL v3.0

- An open source webapp which can be run locally to create resumes and format research papers.

OTHER PROJECTS

SRM Brain

- A webapp that provides production ready APIs for several Deep Learning (and Machine Learning) tasks along with datasets and tools to clean data.

Pulse

- A scripting language for optimized implementation and deployment of deep learning (and AI in general) algorithms.

Arogya

- A fitness application (Android) that can provide information about calorific value of food from its image using Convolutional Neural Network.

- Subramani, Malarvizhi, Kayalvizhi Rajaduari, Siddhartha Dhar Choudhury, Anita Topkar, and Vijaykumar Ponnusamy (2020). "Evaluating One Stage Detector Architecture of Convolutional Neural Network for Threat Object Detection Using X-Ray Baggage Security Imaging". In: *Revue d'Intelligence Artificielle (RIA)* 34 (4).
- Vanusha, D, B Amutha, Siddhartha Dhar Choudhury, and Aayush Agarwal (2020). "A Survey on Techniques for Early Detection of Diabetic Retinopathy". In: *Advanced Deep Learning Techniques, Springer EAI Series*.
- Choudhury, Siddhartha Dhar, Kunal Mehrotra, Christhu Raj M R, and Rajeev Sukumaran (2019). "An Efficient Neural Network Model by Weight Roll Algorithm". In: *International Journal of Recent Technology and Engineering,* 8 (4).
- Choudhury, Siddhartha Dhar, Shashank Pandey, Kunal Mehrotra, Christhu Raj M R, and Rajeev Sukumaran (2019). "Optimization of neural networks using Deep Genetic Network Algorithm". In: *International Journal of Engineering and Advanced Technology* 9 (1).
- Choudhury, Siddhartha Dhar, Shashank Pandey, Kunal Mehrotra, Rajeev Sukumaran, and Christhu Raj M R (2019). "Reducing Regression Time Using Nth Absolute Root Mean Error". In: *International Journal of Innovative Technology and Exploring Engineering,* 8 (12).
- R, Christhu Raj M, Rajeev Sukumaran, Siddhartha Dhar Choudhury, and Kunal Mehrotra (2019). "Stochastic Network Calculus for Loss Analysis and its effects of fading in acoustic networks for Underwater wireless communication"," in: *Journal of Information and Optimization Sciences, Taylor and Francis Publisher*.

👥 Conference Proceedings

- Malarvizhi, S, R Kayalvizhi, Siddhartha Dhar Choudhury, Anita Topkar, and P Vijaykumar (2020). "Detection of sharp objects using Deep Neural Network based Object Detection Algorithm". In: *Proceedings of the IEEE ICCCSP 2020 Conference, September 27-28, 2020*. Chennai, India: IEEE.

AWARDS

- Gold Medal for Best Research Paper in Computer Science at SRM Research Day 2019 for my paper titled - "Deep Genetic Network".
- Third prize for my startup idea Vastu Kosh at Presente Vous Startup Fair in VIT, Chennai, 2018.

Drishti

- A web application for early detection of malaria using Deep Neural Networks.

NumPP

- C++ port to Python's numerical computation package NumPy.

CartooGAN

- Generative Adversarial Network trained on cartoon character faces to generate novel characters.

PROGRAMMING LANGUAGES & TECHNOLOGIES

Languages: C C++ Python Java Golang JavaScript PHP Kotlin

Frameworks: Flask Django FastAPI TensorFlow PyTorch JAX OpenAI Gym Bootstrap Materialize jQuery

Databases: SQL DynamoDB MongoDB