

DHEERAJ REDDY PAILLA

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Bay Area, CA

EDUCATION

Georgia Institute of Technology

MS in Computational Science & Engineering

2021-2022

3.8/4.0

IIIT Hyderabad

B. Tech in Computer Science & Engineering

2016-2020

7.76/10

EXPERIENCE

Software Development Engineer Jun '22 – Jan '23

Amazon.com

- Worked on the Datapath Responder platform, which is a co-hosted microservices framework that hosts critical Amazon.com services such as Search and Detail Page.
- Developed **chaos tests for Responder's L2 Cache fleet** in Java using synthetically generated data to determine knee points of degradation and scaling constraints.
- Deployed 3 dedicated OneBox Pipelines for Datapath partner teams. This **sped up developer velocity** by allowing multiple teams to simultaneously deploy changes into pre-prod stages and test for degradation in Responder.
- Completed the emergency migration of 339 hosts of type C5-12 to replace scarce C6g hosts in Responder's PEK region. This **prevented any service degradation during Prime Day 2022**.
- My on-call responsibilities in the Datapath Hosting team included onboarding multiple Amazon microservices onto the Datapath platform, managing their scaling requirements for peak days, and resolving various customer issues.

AI Software Engineer

Aug '20 – Dec '20

Subtl.ai

- Worked on the Subtl Bot project to develop an ingestion pipeline to **read and index documents for search** using Tesseract, OpenCV, and Sentence-BERT
- Clients included the largest bank in India (SBI) and a primary defence contractor to the Indian Army

Research & Development Intern May '19 – Jul '19

Siemens

- Worked on the Intelligent Traffic Management project to **detect and classify vehicles on Indian roads** using CenterNet with a DLA34 backbone achieving mAP of 88, improving existing system by 7%. Deployed this model to Jetson TX2.

AWARDS & ROLES

- IIIT Hyderabad Dean's Research List - Awarded **2x** Top research contributor (2018-19 & 2019-20)
- IIIT Hyderabad Dean's Merit List - **Top 20%** of class (2018-19)
- Achieved **#5** in videos, **#7** in images in VisDrone Challenge @ ICCV 2019
- Teaching Assistant - Software Systems Applications & Development, Big Data & Policing, Privacy & Security on Social Media, Real Analysis, Software Engineering, Computer Networks
- World Scholars' Cup 2015 - **#1** Debater, **#1** Team Debate, **#2** Overall finish in Qatar regional round

SKILLS

Programming: Python, Java, C/C++, Go, Bash

Software Development: Flask, Django, JS, React, Angular, MySQL, Docker, React Native

Machine Learning: PyTorch, Keras, Transformers

ACADEMIC PROJECTS

BASH

Made a clone of the Bash terminal in C using system calls, threading and multiprocessing

QUIZ APP

Developed a MCQ quiz web app using Go (Gin) as backend and React as frontend

PROXY SERVER

Built a non-blocking + caching HTTP web proxy

ULTIMATE TIC-TAC-TOE BOT

Developed the heuristic of a bot that plays Ultimate Tic-Tac-Toe on a 4x4x4x4 grid, using alpha-beta pruning and Zobrist hashing

GAME DEVELOPMENT

Developed my version of popular games - Pacman Killer and Legend of Zelda (OpenGL in C++), Tunnel Rush (WebGL in JS), and Bomberman (Python)

BIRD-V-DRONE

Built a binary classifier to distinguish between birds and drones using Bag of Visual Words + kNN + SIFT

IMAGE SUPER RESOLUTION

Implemented a deep learning model proposed by Dong et al to achieve single image super resolution

HATE SPEECH ANALYSIS

Collected and analyzed hate speech on alt-right website Gab during the Pittsburgh synagogue shooting in 2018. Evolved into research work on antisemitism published at ACM WebSci 2021

URBAN MIGRATION SIMULATOR

Developed a Cellular Automata + linear regression model to simulate population flow into cities

DRUG PROPERTY PREDICTION

Implemented a deep learning model to predict a drug molecule's energy given its SMILES+XYZ data

PUBLICATIONS

- Hemank Lamba, Shashank Srikanth*, **Dheeraj Reddy Pailla***, Shwetanshu Singh, Karandeep Juneja, and Ponnurangam Kumaraguru. **Driving the Last Mile: Characterizing and Understanding Distracted Driving Posts on Social Networks**. Proceedings of the 14th International AAAI Conference on Web and Social Media. 2020.
- Mohit Chandra, **Dheeraj Reddy Pailla***, Himanshu Bhattia*, Aadilmehdi Sanchawala, Manish Gupta, Manish Shrivastava, Ponnurangam Kumaraguru. **"Subverting the Jewtocracy": Online Antisemitism Detection Using Multimodal Deep Learning**. Proceedings of the 13th ACM Conference on Web Science. 2021.

* - equal authors by contribution