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Summer Internship (15 May 2024 - 15 Aug 2024)

Engineering is an artform that can enhance lives. I'm a proud engineer with holistic experience in many fields like DevOps, Machine Learning, and Distributed Computing. I also dabble in writing articles, and video editing.

Experience

PayPal - SDE2

Aug 2022 - Current

- Worked on high performance, realtime card processing component that **handles 50M requests** every day using Ruby, Rails, GRPC, ProtoBuf, Docker, Rake, Rspec, Kubernetes for BrainTree Brazil.
- Created a new flow for secure third-party integration using Spring Reactor, Message Queues, CloudEvents, and OpenAPI and reduced PayPal's Japan SLA **from 3 weeks to 3 hours** for 95% requests.
- **Awarded Spot Award** for quick ramping up and making signification contribution to Japan initiatives.
- **Awarded Spot Award** for pivotal role in Braintree Innersourcing using Ruby on Rails.

PayPal - SDE1

Aug 2021 - Aug 2022

- Built, deployed and monitored a new concurrent SpringReactor component from scratch with PayPal-standard API specs for Japan Initiatives. **Made latency reduction by 50%.**
- **Innovation Spotlight** - PayPal-wide recognition from **Global Innovation Head**, Maria Mileder, for creating a new format for Global Innovation Tournament with recommendation algorithm based on NLP, **managing a team of 4** and developing the website.

PayPal - SDE Intern

Jan 2021 - July 2021

- Created a PayPal Playground that **runs code realtime on browser** to test out different flavors of PayPal integration right inside your browser using MonacoEditor, ReactJS and DOM. Currently being used by **2 teams** inside PayPal.

Guvi Geek Networks - SDE Intern

May 2019 - Jun 2019

- Created Adaptive Learning Algorithm for **2k simultaneous test-takers** and its analytics dashboard which helps learners with a non-standardized tests adaptive to user's learning level using Websockets, Flask, Bootstrap and Gevent.

Nurtem - SDE Intern

Apr 2019 - May 2019

- Worked to automate CI/CD of the startup's workflow using Python, Docker, Kubernetes, Jenkins, GKE on Google Cloud Platform and **saving several hundred man-hours.**

Education

University of Illinois, Urbana-Champaign

Jan 2024 - May 2025

- Master of Computer Science
- Graduate **Research Assistant** at Center for Artificial Intelligence and Innovation funded by **Amazon**

Vellore Institute of Technology, Chennai Campus

Jun 2017 - Jul 2021

- Bachelor of Technology, Computer Science **CGPA: 9.08/10**
- **Letter of Appreciation from Vice Chancellor** for developing a university-wide programming and assessment portal called VPROPEL.

Patents & Publications

- **Patent Published invention** - App. No. : 202041031475
 - Novel Computer Vision and Graph Algorithm based Diet Planning using custom IoT hardware.
- **Application of NeuroEvolution in Autonomous Cars** - International Virtual Conference on Cyber Physical Systems journal, Springer.
 - Applies NeuroEvolution in self driving cars simulated using Unity Environment and NEAT algorithm where cars learnt **collision avoidance** in **just 12 generation** using 90% crossover and 10% mutation rate.
- **Deep ResNet based food recognition for enhanced Augmented Reality** - arXiv:2005.04292
 - Research on using various image models including ResNets trained to detect food from images for Augmented Reality with **93% accuracy** and **250ms CPU** inference time.

- **An alternative C++-based HPC system for Hadoop MapReduce** - Degruyter's Open Computer Science Journal.
 - Introduces **Delayed Reduction** for implementing machine learning algorithms in MapReduce paradigm to achieve **10x speedup** over Spark using OpenMP/MPI based distributed HPC systems in Containerized C++17 environments.

Leadership Roles

- **Website Lead for PayPal-wide Tournament** - Global Innovation Tournament's website lead for 2022 tournament leading a website of 4 developers.
- **Mentor@PayPal** - For **6 interns** and gave orientation speech for over **200 new graduates** at PayPal.
- **Main organizer** of VIT's Inter-College Hackathon called Not-a-thon during TechnoVIT TechFest.
- **Conducted Seminar** on Advanced Python concepts for **over 50** students of VIT.
- **Alumnus Guest Lecturer** at VIT Chennai in 2022 for Object Oriented Programming for a **class of 80** students.
- **Student Assistant** at IIT Bombay for Faculty Development Program in Python for **45k faculty**.
- **Machine Learning Leader** at VIT Chennai's Code-Y-Gen club.

Accomplishments

- **Toycathon 2021 - National Level - Appreciation from PM of India Narendra Modi** - VR environment that teaches Yoga and corrects your pose using AI based on PoseNet with 91% accuracy. [VIDEO](#)
- **Smart India Hackathon 2020 - National Level** - Grand Finalist - Envisioned a PoseNet based Yoga AI instructor to monitor and correct learning experience in real-time in a VR environment.
- **Smart India Hackathon 2019 - National Level - Grand Finalist** - Coded an automation process for medicine processing instruments data using Python.
- Won **Generative AI hackathon @ PayPal 2023** for innovation applications of LLM for Venmo users.
- **First Place in SRM HackSummit** - Built an AI based diagnostic solution to assist doctors quickly identify and elevate serious cases using Image Processing CNNs using PyTorch.
- **First Place in Renaissance Startup Hackathon Winner 2019**- Implemented a Facial Feature Tracking based Driver alertness assistant with interactive dashboard for Ride hailing companies.
- **Second Place in Microsoft Innovation Club Hackathon 2019** - Developed self-driving racing car using Lidar inputs and NEAT genetic algorithm in a virtual environment.
- **First Place in Valeo Codeathon 2019 AND 2020**- Wrote a lab experiment assistant tool and a code debugging helper respectively.
- **First Place in Venmo Ideathon 2022** - Best presentation for an ideathon to improve Venmo experience.

Projects

- **VoxVR (2023)** - Learn public speaking in VR using simulated stage and board meeting environments using Unity, WebRTC, NodeJS and C#. RealTime feedback while speaking with PoseNet AI with **millisecond inference** and Gaze Tracking. [VIDEO](#)
- **BayMax (2023)** - Quick diagnosis for common medical concerns using **GPT3.5-Turbo** with Android Java and Prompt Engineering for safe and precise recommendation. [PlayStore](#)
- **Deep Reinforcement Learning (2022)** : based Racing Car trained using StableBaselines3 for Lidar based autonomous navigation in a virtual environment in Unity Game Engine. [VIDEO](#)
- **Recommendation Engine (2022)** : SentenceTransformer based recommendation engine that can suggest ideas using SentenceTransformer based clustering and Jaccard's similarity index.
- **Sugrfree (2020)**: An AI based diet management system that uses **patent-pending** ResNet-based Deep Learning in Computer Vision to recognize food from camera and uses Neo4j to recommend and manage calorie intake. It is written in Neo4j Cypher language, GraphQL and React Native stack called **GRANDstack**. [VIDEO](#)
- **NotFFCS (2019)**: Notffcs is a college helper app that helps manage attendance, marks, timetable, notifications and class information all from an app instead of visiting the official website. It had **1.5k active users** at its peak. [LINK](#)

Skills

Python, Java, JavaScript, Ruby, Haskell, SpringBoot, DataDog, Kibana, Looker, GCP, Kubernetes, Docker, Spinnaker, GKE, AWS, Django, Flask, ReactJS, ReactNative, Unity, Unreal Engine, Stable Baselines, Pandas, Numpy, PyTorch, Tensorflow, Scikit-Learn, Seaborn, OpenAI, LangChain, GPT, Neo4j, ResNet, PoseNet, OpenCV, C++, OpenMP, OpenMPI, GRPC, CloudEvent, MessageQueue, Kafka, MongoDB, Postgres, WebRTC,