Kowshik Chilamkurthy

Senior Research Engineer - Reinforcement Learning
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Ask my telegram bot: KnowKowshik
https://github.com/kowshikchills

Education

Indian Institute of Technology, Madras *July 2014 - May 2018*
Bachelors of Technology, Civil Engineering

Minor : Mathematics

Key Courses : Maths Logic, Combinatorial Optimization, Decision Models, Computer Applications in Highway Engineering, Analytical Techniques in Transportation

Professional Experience

Blue Avenir GmbH, *May 2021- present*
Reinforcement learning Specialist

- Deploying Reinforcement learning and machine learning models for customer journey optimisation and marketing strategies
- Powering highly scalable CRM systems using deep reinforcement learning
- Deploying scalable AI systems on different cloud environments

Ola Electric, Autonomous Vehicles *June 2021- May 2022*
Research Engineer II- Reinforcement learning

- Managed 4 Research Engineers to build the Reinforcement learning practice in OLA Electric
- Implemented **Reinforcement Learning Algorithms and Imitation Learning Algorithms** for autonomous driving cars
- Devised RL Algorithms for **Emergency Adaptive Braking** and baked safe constraints into the agents
- Developed Deep RL agents, algorithms and a **scalable, distributed training platform** for Autonomous Driving(AD)
- Mentored 3 member team to develop **Predictive Maintenance** and Fault Detection functionality using **Neural Hawkes Process** and Cox Process

Theremin.ai, Fractal Analytics *Feb 2019- June 2021*
Data Scientist- Reinforcement Learning, Quantitative Trader

- Implemented **Machine learning**, **Deep learning** and **Reinforcement Learning** algorithms for devising different trading strategies and managed **models in production**
- Extensively researched and developed custom **Deep Q-learning, Policy Gradient and Deep Deterministic Policy Gradient** agents for trading applications
- Mentored by Prof. Shalab Bhatnager (CSE Dept; IISC Banglore) to develop **custom Safe RL agents**
- Deployed India's one of the **first Reinforcement Learning based trading strategies** in the Indian markets

Patents and Publications

A Statistical Overview of Sand Demand in Asia and Europe *July 2016*
UKIERI Conference, Goa

Automation of Glass Fragmentation Analysis Using Image Processing(Not attended) *Jan 2017*
ICCEN 2017, Australia

Modelling Operational Conditions to Predict Life Expectancy and Faults of Vehicle Components in a Fleet *Sep 2018*
Patent number: USA20200090419, Approved

Internship Experience

Conduent Research Labs, Banglore *Autumn 2017*
Research Internship, ML & Statistics team

- Surveyed existing literature to implement a **Point Process Algorithm** for detection of vehicle faults

– Experimented extensively with **Neural Hawkes Process** and optimized its python implementation

Xerox Research Labs, Banglore *Summer 2017*
Data Science Internship, ML & Statistics team

– **Patented** the idea of **Vehicle-Route Analysis** and point process models for fault detection
– **Best Internship Project - 2nd Runner up**. Communicated requirements and results with clients.
– Led an initiative to extract **insightful features from unstructured data** (GPS & Tabular). Employed different methods to detect anomalies in data (PCA, KMeans).
– Developed pipelines to integrate large and diverse databases and implemented wide range of **Fault Detection Models** using extracted features

Nadhi Information Technologies, Chennai *Autumn 2016*
Winter Internship

– Architected and implemented analytics and machine learning components for *nPulse* product
– **Integrated** machine learning plugin written in Python into existing Java product code

Light House Analytics, Pune *Summer 2016*
Data Science Internship

– Engineered features, selected parameters and calibrated regression models for accurate **TRP Ratings Prediction** of advertisements for **Viacom Inc**
– Designed an algorithm for **Advertisement Schedule Optimization** based on TRP rating predictions. Implemented in Advanced Process OPTimizer (**APOPT**) software package
– Incorporated the **Business Constraints** of advertisements into schedule optimization algorithm

FOSSEE Project, IIT Bombay *Autumn 2015*
Winter Internship, Prof. Prabu Ramachandhran

– Developed and opensourced systematic Python code for solving material mechanics problems

Blogging and Open Source

Data Science Content Writer
Towards Data Science, Medium

– Published 35+ innovative and educative blogs on **Reinforcement learning, Game Theory, Point Process Models and Survival Models** with cumulative viewership of 20K+ views
– Popular blogs on **solving Covid-19 using RL** garnered significant interest from academia, industry and governments for potential collaboration

Reinforcement Learning Annotated Papers
Open Source, github.com

– Compiled and hand annotated **30+** ground breaking Reinforcement Learning research articles
– Covered traditional methods like **DQN, PG, A2C** to advanced topics like **Distributional-RL, Offline Policy Learning and Deep Deterministic Methods**

Educative Bot Application
Open Source, github.com

– Innovated an **End-to-End bot application** in Python to handle Ed-Tech customer in telegram mobile application
– **Designing NLP and ML** course track (25 percent completed) for testing the bot usage in effective content dispersal