Vinay Kudari

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Education

- **State University of New York at Buffalo** — Buffalo, NY
  Master of Science in Computer Science — *Sep. 2021 – Present*
- **National Institute of Technology, Durgapur** — West Bengal, India
  Bachelor of Technology in Computer Science and Engineering — *July 2014 – May 2018*

Relevant Courses

Data Structures & Algorithms, Machine Learning, Reinforcement Learning, Computer Vision & Image Processing

Skills

- **Languages**: Python, SQL, Bash, Dart, JavaScript, Java
- **Libraries**: PyTorch, Django, PySpark, Pandas, NumPy, OpenCV, Matplotlib, Scikit, SQLAlchemy, Flask, Flutter, FastAI
- **Tools**: Docker, Compose, Kubernetes, PostgreSQL, Redis, Sentry
- **Cloud**: GCP, Heroku, AWS

Experience

- **Brave Orbit, Capetown, South Africa - Full Stack Developer** — Jan. 2020 - Aug. 2021
  - Re-Built a healthcare app into a cross-platform mobile application using Flutter. Set up BLoC, database and network layers
  - Designed & developed HIPAA compliant scalable push notification service leveraging Cloud Tasks & Firebase Messaging
  - Medication info and interactions API was built on top of the NIH and MPR APIs that supports caching
  - Developed a clinical surveying platform that sends out email and SMS alerts to patients and collects feedback periodically
  - Built a ERP system using Django, custom features such as multi-product substitutions, combo-products are developed
  - Kubernetes CI/CD workflows were setup on GitLab to test, build and deploy API's on cloud
  - NGINX reverse proxy server with SSL was setup on Docker to forward the traffic to services based on custom conditions
- **Accenture, Bangalore, India - Advanced Application Engineering Analyst** — Sep. 2018 - Dec. 2019
  - PL/SQL procedures were used to generate drug material hierarchies from massive amounts of drug life cycle data on a Redshift cluster
  - Performed trend analysis on drug potency data using PySpark on a EMR cluster to forecast potential raw materials affecting the drug quality. Several statistical measures are performed and colour coded control charts are visualised on spotfire
  - Designed and developed automated data validation ETL pipeline leveraging microservice architecture to validate data across a wide range of data sources that resulted in 70% effort reduction and 75% cost saving on infrastructure
- **Vishakapatnam Port Trust, Visakhapatnam, India - Software Intern** — May 2017 - July 2017
  - Created datasets and trained machine learning models to identify cargo type and estimated size of lease area using computer vision techniques

Relevant Projects

- **Maze Solver (Reinforcement Learning)**
  - Designed a custom 2D grid world; Implemented/applied RL algorithms like Q-Learning, Monte Carlo and Deep Q-Network
- **Car Dent Detection (Computer Vision, Deep Learning)**
  - Performed instance segmentation based on Mask-R-CNN architecture to segment dents; Trained using COCO dataset
- **DeepJet Autonomous Car (Computer Vision, Deep Reinforcement Learning)** **code**
  - Assembled the car with Jetson Nano; Cross-platform mobile app was build using Flutter to control the bot remotly
  - Implemented WebSockets to exchange sensor data with the controller; Applying RL/DL algorithms to make it autonomous
- **Mask Detection REST API (Deep Learning, Backend** **code**
  - Built a server-less deep-learning API service using Django REST Framework to classify images

Thesis

- **Gender Classification Using CNN under Dr. Dakshina Ranjan Kisku**
  - Implemented Gil Levi and Tal Hassner's deep neural network architecture in PyTorch, tweaked the network layout, and evaluated various second-order optimisation techniques