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
- **Scientific Libraries**: Pandas, NumPy, Matplotlib, Scikit, SQLAlchemy
- **Tools**: Docker, Compose, Kubernetes, PostgreSQL, Redis, Sentry
- **Frameworks**: Django, Flask, Flutter, PyTorch, PySpark, FastAI, OpenCV
- **Cloud**: GCP, Heroku, AWS

Experience

- **Brave Orbit** — Capetown, South Africa
  Full Stack Developer — *Jan. 2020 - Aug. 2021*
  - Re-Built a popular healthcare app into a cross-platform mobile application using Flutter. Involved in features such as setting up BLoC, database and network layers
  - Designed & developed HIPAA compliant scalable push notification service leveraging Cloud Tasks, Functions & Firebase Cloud Messaging
  - Developed an API on top of the NIH and MPR APIs to retrieve medication data and interactions. Caching was set up to improve the performance
  - Developed a clinical surveying platform that sends out email and SMS alerts to patients and collects feedback periodically
  - Lead a team in developing 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 to forward the traffic to services based on custom conditions
- **Accenture** — Bangalore, India
  Advanced Application Engineering Analyst — *Sep. 2018 - Dec. 2019*
  - Transformed huge volumes of drug life cycle data and hierarchies of drug materials were generated using PL/SQL procedures on 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 a spotfire dashboard
  - 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 size of lease area

Relevant Projects

- **Maze Solver using Reinforcement Learning**
  - Designed a custom 2D grid world, implemented RL algorithms like Q-Learning, Monte Carlo and Deep Q-Network from scratch
- **DeepJet Autonomous Car (work in progress)** — **code**
  - Assembled the car with Jetson Nano as its brain. WebSocket was used to exchange data with the controller
  - Cross-platform mobile app was build to control the car. WebRTC protocol is used to receive real-time camera feed
- **Mask Detection REST API** — **code**
  - Built a server-less deep-learning API service using Django REST Framework to classify images into 3 buckets (with mask, without mask, improperly worn mask)

- CI/CD pipelines was setup to automatically build and deploy docker containers in Cloud Run

- **Gender Classification Using CNN – Graduate Thesis**
  - Implemented Gil Levi and Tal Hassner's deep neural network architecture in PyTorch, tweaked the network layout, and evaluated various second-order optimisation techniques
  - Retraining the model with varying dataset resolutions resulted in an 86.3% accuracy