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, HTML, CSS
- **Libraries**: PyTorch, Django, PySpark, Pandas, NumPy, OpenCV, Matplotlib, Scikit, SQLAlchemy, Flask, Flutter, FastAI
- **Tools**: Docker, Compose, Kubernetes, PostgreSQL, Redis, Sentry, Git
- **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 reminder/interactions service was built using Django; NIH and MPR APIs are used to fetch interactions
  - 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 huge volumes of drug life cycle data using Redshift
  - 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 dataset and trained SVM with gaussian kernal to identify cargo type; estimated size of lease area using computer vision techniques

Relevant Projects

- **Smart Broker — Deep/Reinforcement Learning, Computer Vision**
  - Designed custom environment for crypto trading, training the networks on visual technical indicators like Candelstick, RSI
  - Explored LSTM/Transformer as function approximators and trained the agent using Actor Critic algorithms
- **Car Health Score — Computer Vision, Deep Learning** **live**
  - Trained segmentation model to detect damage and calculate health score; Deployed model as a REST API in GCP
- **DeepJet Autonomous Car — Deep/Reinforcement Learning, App Dev, Backend** **code**
  - Assembled the car with Jetson Nano; Cross-platform mobile app was build using Flutter to control the bot remotely
  - 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**
  - Annotate mask dataset and fine tune ResNet model; Expose trained model as API and package using microservice architecture

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