Vinay Kudari

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Education

- **University at Buffalo [3.9/4]** — Buffalo, NY
  Master of Science in Computer Science — *Sep. 2021 – Present*
- **National Institute of Technology, Durgapur [7.5/10]** — 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, NLP

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, improved performance by 40%
  - 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 automatically test, build and deploy backend services on cloud
  - Oversaw a couple projects and served as a mentor to junior developers. A custom ERP system project that I led helped a supermarket sustain 5X surge during the COVID-19 epidemic
- **Accenture** — Bangalore, India
  Advanced Application Engineering Analyst — *Sep. 2018 - Dec. 2019*
  - Redshift PL/SQL procedures were used to generate drug material hierarchies from huge volumes of drug life cycle data
  - 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 color coded control charts are visualized 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
  Computer Vision Intern — *May 2017 - July 2017*
  - Created datasets and trained a support vector machine with a Gaussian kernel to detect cargo class, estimate lease area size, and monitor for suspicious movement using the block matching algorithm

Relevant Projects

- **Smart Broker — Deep/Reinforcement Learning, Computer Vision, Time Series Analysis**
  - Designed OpenAI gym environment for crypto time series data, trained on visual technical indicators like RSI, MACD
  - Applied LSTM chained with CNN as function approximators to Actor Critic algorithms; ~10% returns were achieved
- **Vehicle Health Inspector API — Computer Vision, Deep Learning** **link**
  - Trained segmentation model based on Mask-R-CNN architecture to segment damaged areas and calculate health score
- **DeepJet Autonomous Car — Deep/Reinforcement Learning, App Dev, Backend** **link**
  - 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 — Computer Vision, Deep Learning, Backend**
  - Developed mask detector model using Yolo to detect faces and fine tuned ResNet to detect masks on faces
  - Deployed model as serverless deep-learning REST API in Cloud Run with automated build pipeline setup using Cloud Build

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