

# Vinay Kudari

<https://vinaykudari.me>

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**Profile:** Masters student with 3.5 yrs of software dev experience and a passion for developing ML solutions

## RELEVANT SKILLS

Python, SQL, PyTorch, PySpark, OpenCV, NumPy, Pandas, Django, Docker, Kubernetes, Git, Redis, Kafka, GCP, AWS

## EDUCATION

- University at Buffalo [3.95/4.0 GPA]** Buffalo, NY  
• *Master of Science in Computer Science (AI/ML Specialization)* Sep 2021 - Present  
*Courses:* Data Structure & Algorithms, Computer Vision, NLP, Deep Learning, Big Data Systems, Reinforcement Learning  
*Research:* Working at A2IL lab on projects related to NLP and Computer Vision, advised by Prof. David Doermann
- National Institute of Technology, Durgapur [3.3/4.0 GPA]** West Bengal, India  
• *Bachelor of Technology in Computer Science and Engineering* July 2014 - May 2018  
*Courses:* Operating Systems, Computer Architecture, Networking, Database Management Systems, Compilers, Digital Image Processing  
*Thesis:* Gender Classification using CNN advised by Dr. Dakshina Ranjan Kisku

## PROJECTS

- Recommender system using graph neural networks (gnn, deep-learning):** Developed an inductive matrix completion model using user-item node embeddings pretrained on movie reviews; 1-hop sub graphs are used to forecast ratings
- Computer vision based vehicle damage detector api (vision, rest-api, django, pytorch):** Trained an instance segmentation model to detect damages; assigned a health score based on relative area of damage and deployed as an api
- Unordered image stitching and deghosting (vision, image matching):** Estimated approximate overlap area by minimum variance technique on binarized images; stitched images based on binary tree model; removed deghosting from the overlap areas by selecting regions based on minimum local gradients
- Open-source contributions (nlp, open-source):** Core contributor to HuggingFace Datasets official repository
- Information extraction as seq2seq task (nlp, transformer, text2text):** Transformed labelled structured data into text; finetuned T5 model to generate text and extracted entities using REGEX
- Abstractive text summarization of tabular data (nlp, transformer):** Flattened tables into sequence of words, preserved structure using key:value format; Explored various text2text models to generate summary of news articles
- Deep learning based serverless rest api (serverless, rest-api, cloud-run, ci/cd):** Created synthetic face mask dataset and developed automated pipeline to build, test and deploy trained model in a docker container to google cloud run
- Reinforcement learning based crypto trading bot (time-series):** Designed a continuous action space OpenAI gym environment to handle trading data; LSTM with CNN was used as function approximator to actor critic algorithms
- Custom car controller app (full-stack, mobile-app, fastapi, webrtc):** Assembled the car with Jetson Nano; Cross-platform mobile app and controller service was developed to control the bot over network

## EXPERIENCE

- Sony (Playstation)** San Francisco, CA  
• *Software Development Intern | java, spring, kafka, concurrency, grpc, no-sql, cassandra* May 2022 - Present
  - Working on a backend service which publishes hints to the online PS5 users dynamically based on the game context
  - Porting monolith news publisher service into micro services using gRPC based custom built framework
  - Building grafana analytical dashboards to visualize service performance charts derived from over 100M active users
- Brave Orbit** (Remote) Capetown, South Africa  
• *Full Stack Developer | python, rest-api, django, flutter, pytest, redis, gcp, k8s* Jan 2020 - Aug 2021
  - Developed a cross-platform app using BLoC pattern, implemented database, network and state management layers
  - Engineered HIPAA compliant scalable async push notification service for medication reminder application
  - Developed a task scheduler for clinical surveys that delivers email, SMS alerts and gathers response on a recurring basis
  - Developed a custom ERP system with multi-product substitutions and combo-product life cycle tracking features
  - Setup Kubernetes CI/CD workflows to automatically test, build and deploy backend services on cloud
  - Developed automated testing pipelines and improved test coverage for both frontend and backend services
- Accenture** Bangalore, India  
• *Big Data Developer | python, redshift, pyspark, pandas, aws, distributed-systems* Sep 2018 - Dec 2019
  - Performed time series analysis on drug assay data to identify raw materials that effect the drug quality
  - Designed ETL data validation pipeline using micro service architecture; Manual testing resources were cut by 70%
  - Developed PL/SQL procedures to generate parent child hierarchies using temporal drug life cycle data
- Visakhapatnam Port Trust** Visakhapatnam, India  
• *Computer Vision Intern | vision, opencv, video processing, scikit-learn, numpy* May 2017 - July 2017
  - Extracted frames from surveillance cameras; merged them based on SIFT keypoints and RANSAC; trained a SVM to detect cargo type and estimate lease area; developed a motion detector model to identify suspicious movements

## PUBLICATIONS

- Time series analysis of civil unrest using Graph Neural Networks @ COLING 2022 (In Review):**