Abhilash Balachandran

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About Me

As a Senior Software Engineer with over 5 years of professional experience in system building, I specialize in Machine Learning and am passionate about developing comprehensive, data-driven machine learning products. My expertise encompasses the entire product lifecycle, from data collection, model development and training to scaling up for production.

Work Experience

Ridecell Inc. **Milpitas, CA**
Senior Software Engineer April 2020 - Present

- Automated vehicle damage assessment:
  - Develop and implement deep learning models for automated vehicle damage assessment from images, enhancing Ridecell's key AI product.
  - Engineer scalable data pipelines for model training and automation, utilizing active learning algorithms and distributed systems in Kubernetes clusters.
  - Model deployment in both on-prem Kubernetes and AWS EKS clusters, ensuring robust and efficient production operations.
  - Collaborate with cross-functional teams to create efficient ETL pipelines, enabling effective data management and storage in Amazon S3.
- Driver behavior profiling from Telematics and Fleet data:
  - Performed Feature Engineering and used machine learning algorithms to describe driving behavior
  - Processed 3 years worth of telematics data with Spark
  - Achieved projected net savings of $600K
- Scenario Extraction and analysis from real world data:
  - Developed Data analysis tools for Scenario extraction from real world data (nemosearch.ai)
  - Data cleaning, ETL, filtering, noise removal and analysis of large amounts of ADAS data
  - Processed extensive data across clusters with Spark

Ridecell Inc.
Software Engineer, Autonomous Driving April 2018 - April 2020

- Vehicle detection and tracking using cameras and LIDAR with Deep Learning techniques
- Performed Autonomous Driving Full stack testing, debugging and maintenance
- Developed Apollo ROS Bridge OpenSource code - https://github.com/AuroAi/apollo_ros_bridge

Honda Research Institute, USA **Mountain View, CA**
Robotics Intern Feb 2018 – May 2018

- Developed algorithms for navigation of robots in crowded places

Education

Johns Hopkins University **Baltimore, MD**
Master of Science in Engineering – Robotics Sept 2016 - Dec 2017
National Institute of Technology **Tiruchirappalli, India**
Bachelor of Technology – Mechanical Engineering July 2011 - Aug 2015

Technical skills

- **Languages**: Python, SQL, C++
- **Data Science & ML**: Pandas, Numpy, Scikit-learn, TensorFlow, Keras, Spark MLlib
- **Distributed Computing**: Apache Spark, PyTorch Distributed
- **Pipeline Management & MLOPS**: Airflow, Kubeflow, MLflow
- **Deployment & Cloud**: Docker, Kubernetes, AWS EKS, Docker-Compose, K Serve, Torch Serve, AWS Ecosystem
- **Web Development:** Flask, FastAPI
- **Version Control & Project Management:** Git, JIRA
- **Event Streaming:** Apache Kafka
- **Robotics & Computer Vision**: ROS, PCL, OpenCV