

SUMMARY

- Experienced with software design and development in production using C++, Python, Java and CI/CD tools.
- All 5-year working experience practiced Agile/SCRUM development methodologies.
- Ownership of the back end data pipeline design and implementation.
- Experienced with distributed systems, databases, and big data systems (Hadoop, Hive, Spark, Cassandra, MySQL).

SKILLS

Project Management	JIRA, Polarion, Maven, CMake, Capistrano, Yarn, Fabric
Programming	C++, Python, Java, Scala, Ruby, Javascript, Golang
Frameworks	ROS, Spark, Play Framework, Rails, EmberJS, Tensorflow
Databases	MySQL, Cassandra, Hive, Redis
Unit Test	GTest, JUnit, Rspec
CI/CD	Git, Jenkins, Docker, Kubernetes, DotCI, CircleCI, Gitlab CI/CD

EXPERIENCE

Present May 2020	Aptiv Senior Algorithm Developer, WUPPERTAL, Germany <ul style="list-style-type: none"> ➤ Support the situation assessment (SITA) features development for BMW L3 pilot in agile environment. ➤ Design an end-to-end KPI pipeline to generate performance metrics for the SITA module using Python. ➤ Prioritize and define the KPI to evaluate the SITA according to project milestones and requirements. ➤ Collect road test rosbags for the lane change events in different scenarios and label the ground truth. ➤ Cooperate with the stakeholders to optimize the Object-Oriented Design (OOD) of the error handling interface (UML, C++14) and unit tests (Test-Driven Development). Accomplishment : Drive the design of the KPI pipeline and implement from scratch for the team. <div> C++14 ROS Python CMake GTest UML Jenkins Git Auto-Scrum Enterprise Architect Polarion JIRA </div>
May 2020 Aug 2019	Aptiv Senior Algorithm Developer, WUPPERTAL, Germany <ul style="list-style-type: none"> ➤ Lead the ML-based lane change prediction algorithms design for PSA L3 highway autopilot. ➤ Work closely with product owner and stakeholders to analyze system requirements and enumerate use cases compatible with EuroNCAP. ➤ Investigate and propose ML-based concepts for close-range lane change prediction on the highway. ➤ Feature engineering of lane change events from highway datasets (NGSIM and HighD) for ML model using Python. Accomplishment : Lead the ML-based motion prediction module design, concept simulation (Python), and implementation on ROS (c++14). <div> C++14 ROS Python CMake GTest Gitlab CI/CD </div>
May 2018 Feb 2016	Groupon Software Engineer, SEATTLE, WA, USA <ul style="list-style-type: none"> ➤ Develop features for a core REST back-end service in CRM system using Java to send email campaigns and mobile notifications to over 6M global customers daily for customer engagement. ➤ Optimize the continuous deployment process from using shell scripts to Capistrano. ➤ Contribute to the back-end job migration from Hive query to Spark and achieve 10x performance improvement on the on-premises cloud architecture, by collaborating with the Data Engineering team. ➤ Support the back-end system migration from Java Play to Dropwizard framework (Java8) by optimizing the logging asynchronously (Log4j) and implementing a comprehensive dashboard of system metrics using Splunk. ➤ [Ownership] Optimize and migrate a Hive SQL-based batch data pipeline to Spark 2.4 on Hadoop. ➤ [Ownership] Design and optimize the data pipeline over Hadoop and Cassandra clusters using Spark. Accomplishments : <ul style="list-style-type: none"> ➤ The batch data pipeline takes 50+% less runtime and 80+% less storage to pull data from the Enterprise Data Warehouse (EDW) and write to Hadoop. ➤ Speed up the data writing process (2x faster) from Hadoop to Cassandra clusters by tuning up throttles without impacting the APIs' SLA. <div> Java8 Scala Spark Maven Yarn Capistrano Splunk Jenkins Docker DotCI MySQL Hadoop Cassandra Redis Hive Swagger AWS </div>

May 2019	Groupon Software Engineer, DUBLIN, Ireland
May 2018	<ul style="list-style-type: none"> > Led the GDPR project for the Customer Relationship Management (CRM) system to safely consolidate and migrate all EMEA consumer data in different databases : MySQL and Cassandra. > Develop REST back-end API(CRUD) on Rails to interact with front-end features (EmberJS) for the EMEA merchandise platform. > Mentor the intern to implement and deliver the system monitoring metrics using Splunk and Grapher. <div> Rails RSpec Capistrano EmberJS MySQL Docker Jenkins DotCI Cassandra </div>
Aug 2015	Auro Robotics Motion Planning Engineer Intern, SUNNYVALE, CA, USA
May 2015	<ul style="list-style-type: none"> > Construct an operational electric self-driving shuttle from scratch with 3 founders and 4 engineers in three months (seed round investment : \$120K). > Implement a waypoint-following path planner using GPS data and a RRT* path planner using LiDAR data with ROS (C++/Python). > Compare performance of different local planners (A*, RRT*) in ROS simulations and road tests. <p>Accomplishment : Tech media's spotlight at YC Demo Day Summer 2015 & receive \$2.1M investment.</p> <div> C++11 ROS CMake GTest OMPL Boost Jenkins </div>



EDUCATION

2015	Ph.D. Computer Science, University of South Carolina, Columbia, SC, USA
2009	M.S. Electrical Engineering, University of New Mexico, Albuquerque, NM, USA
2007	B.S. Electrical Engineering, China University of Geosciences, Wuhan, China