Yang **Song, Ph.D.**

Senior Algorithm Engineer

+49 1737250812 | ysong.sc@gmail.com | ysonggit.github.io | song24

Experience

Lotus Tech Innovation Centre — *Raunheim, Germany*

Senior Algorithm Engineer — *Apr. 2022 - Present*

- Architected and led cloud-based data processing solutions for ADAS function development of Lotus Eletre and Emeya models, ensuring scalability and performance in EU and US markets.
- Oversaw data compliance, processes, and management activities related to ADAS testing data and production data, ensuring adherence to industry regulations and standards.
- Led cloud DevOps operations, optimizing AWS infrastructure for performance, reliability, and cost-efficiency.
- Achieved a 50% reduction in AWS operational costs through strategic application of serverless architectures and minimalist service design.
- Designed and implemented real-time data streaming pipelines using AWS MSK, Glue, Lambda, and Redshift, enabling efficient collection and processing of vehicle data.
- Provided technical leadership and mentorship to junior cloud engineers, fostering a culture of continuous learning and improvement.
- **Accomplishment: Presented cloud-based data toolchain at TechAD Berlin 2025.**
- **Tech Stack:** Python, Java, Kubernetes, Docker, Jenkins, Gitlab, AWS IAM, EC2, EKS, ECR, S3, RDS, ElastiCache, Opensearch, Glue, Redshift, MSK, Lambda, Serverless

Aptiv — *Wuppertal, Germany*

Senior Algorithm Engineer — *Aug. 2019 - Mar. 2022*

- Led development of radar processing algorithms for **Motional**'s Robotaxi platform, involving data-intensive computations and real-time processing.
- Designed and implemented data evaluation pipelines for algorithm performance assessment, utilizing Python and machine learning libraries.
- Led data collection and labeling pipelines engineering for lane change prediction function development.
- **Tech Stack:** C++17, C++14, ROS, Python, GTest, Bazel, UML, Jenkins, AUTOSAR, Git, ASPICE, Polarion, Matlab

Groupon International Limited — *Dublin, Ireland*

Software Engineer — *Aug. 2018 - May. 2019*

- Led the GDPR data compliance for all EMEA consumers.
- Developed REST back-end API on Rails to interact with front-end features (EmberJS) for the EMEA merchandise platform.
- **Tech Stack:** Rails, RSpec, Capistrano, EmberJS, MySQL, Docker, Jenkins, DotCI, Cassandra

Groupon, Inc. — *Seattle, WA*

Software Engineer — *Feb. 2016 - Aug. 2018*

- Developed and maintained a core RESTful back-end service handling over 6 million daily customer engagements.
- Optimized and migrated a large-scale data pipeline from Hive to Spark, achieving a 50% reduction in runtime and 80% less storage usage.
- Enhanced system architecture to improve performance and reduce costs, showcasing strong cloud resource management skills.
- **Tech Stack:** Java8 (Play), Scala, Spark, Maven, Yarn, Capistrano, Splunk, Jenkins, Docker, DotCI, MySQL, Hadoop, Cassandra, Redis, Hive, Swagger, AWS

Auro Robotics, Inc. (YC-backed start-up, acquired by Ridecell in 2017) — *Sunnyvale, CA*

Robotics Engineer Intern — *Jun. 2015 - Aug. 2015*

- Constructed an operational electric self-driving shuttle from scratch with 3 founders and 4 engineers in three months (seed round investment: $120K).
- Contributed to path planning algorithms for self-driving shuttles, gaining hands-on experience with ROS and sensor data processing.
- **Accomplishment:** Tech media's spotlight at YC Demo Day Summer 2015 & receive $2.1M investment.
- **Tech Stack:** ROS, CMake, Gtest, C++11, Python

Education

University of South Carolina — *Columbia, SC*

Ph.D. in Computer Science & Engineering — *2010 - 2015*

University of New Mexico — *Albuquerque, NM*

M.S. in Electrical Engineering — *2008 - 2009*

China University of Geosciences — *Wuhan, China*

B.S. in Electrical Engineering — *2003 - 2007*

Publications

Y. Song and J. M. O'Kane, "Repeating Patterns of Mobile Robots: A Provably Correct Decentralized Algorithm. I", IROS 2016.

Y. Song and J. M. O'Kane, "Decentralized formation of arbitrary multi-robot lattices", ICRA 2014.

Y. Song and J. M. O'Kane, "Comparison of constrained geometric approximation strategies for planar information states", ICRA 2012.

D. Miklic, S. Bogdan, R. Fierro, Y. Song, "A grid-based approach to formation reconfiguration for a class of robots with non-holonomic constraints", European Journal of Control 18 (2), 162-181, 2012.

Volunteers

Jun. 2024 **UEFA EURO 2024**, Ticketing Volunteer Lead *Frankfurt am Main*