Terry (Jiating) Lu

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SUMMARY

SDE II at Amazon Robotics with 2 years of experience designing and implementing large-scale robotics simulation infrastructure. Strong track record of proposing and leading high-impact engineering projects in federated robotics simulation and system design. Passionate about DIY robots, multi-robot systems, and building developer-facing robotics toolings. USC B.S. & M.S. in Computer Science with a focus in Robotics.

EDUCATION

University of Southern California   **Los Angeles, CA**
  Bachelor of Science in Computer Science, GPA: 3.83   Aug 2019 - May 2023
  Master of Science in Computer Science, GPA: 3.74   Aug 2022 - July 2023

SKILLS

Coding Languages: Python | Java | Kotlin | C/C++ | TypeScript | MySQL | Excel VBA | Free Pascal
Technologies: AWS | Docker | Kubernetes | RabbitMQ | LocalStack | Cue | ROS | Fusion 360

EXPERIENCE

Amazon Robotics   **Westborough, MA**
Software Development Engineer II   Dec 2024 - Present
Software Development Engineer I   Oct 2023 - Dec 2024
- Promoted within 15 months for spearheading high-impact design initiatives in simulation infrastructure.
- Develop federation services powering large-scale software-in-the-loop robotic warehouse simulation.
- Spearheaded redesign of distributed simulation using emulated AWS, enabling parallel service deployment, reducing simulation startup time by **6x**, improving runtime performance by **2x**, and cutting cost by **50%**.
- Delivered robust onboarding and AI-assisted maintenance workflow for production services; now widely adopted by multiple service teams to validate software in simulation and experiment with new algorithms.
- Led componentization of simulation systems into reusable pieces to simplify distributed simulation setup.

Amazon Robotics   **Remote**
SDE Intern   May 2022 - Aug 2022
- Owned development of experimental Checkpoint/Restore feature of Amazon Robotics discrete event simulator which significantly expands the scale of the software-in-the-loop simulations.

USC ACT Lab   **Los Angeles, CA**
Research Fellow & Research Assistant   Aug 2021 - May 2023
- Research in a safe asynchronous path-planning algorithm(RLSS) for a multi-robot system at the Autonomous Coordination of Teams Lab at USC. (C++ | ROS | CMake | Machine Learning)
- Built Voronoi spatial partitioning and trajectory distance collision/checking using FCL/Eigen.
- Write peer-reviewed C++ code and contribute daily to a multi-robot aware planning & control stack repo.
- Develop trajectory scoring functions to select optimal trajectory and ML-based parameter optimization.

PERSONAL PROJECTS

DIY Robotics & 3D Printer Automation Systems   Nov 2016 - Present
- Designed and programmed a **Linux-based Spider Robot (Spooder)** in Python with Linux microcontroller, daisy-chained smart servos, optimized power distribution circuits, and OpenCV for OCR experimentation.
- Developed an **8-legged Bionic Spider Robot (Spidy)** in C++ with Arduino and custom radio libraries.
- Designed inverse kinematics algorithm and statically stable legged locomotion algorithm for spider robot.

LEADERSHIP

Makers at USC, *Project Manager*   Aug 2019-May 2023
- Lead development of a miniature spider robot with 8+ multidisciplinary team members.
- Lead a team of 6+ to design and build a fully automated dual-extruder 3D printer for community use.