

Shengye Wang, Ph.D.

<https://shengye.wang>

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- CONTACT INFORMATION E-mail (work): shengye@waymo.com E-mail (personal): i@shengye.wang
Phone (work): +1(650)960-6924
- EDUCATION **University of California, San Diego, CA** **Sept. 2014 – Jun. 2020**
Doctor of Philosophy in Computer Science
- Dissertation: *Reliability Engineering for Long-term Deployment of Autonomous Service Robots*
- Fudan University, Shanghai, P. R. China** **Sept. 2010 – Jul. 2014**
Bachelor of Science in Microelectronics
- Minor: Economics
- WORK AND RESEARCH **Waymo LLC., Planner & Control** **July 2020 – Present**
Software Engineer
- Build motion planning and decision-making systems for the self-driving vehicles, ensuring that the behavior of Waymo vehicles is safe, smooth, and predictable to other road users
 - Build robust solutions to cutting-edge driving problems
 - Improve how Waymo vehicles act and react in complex and nuanced situations
 - Grow a fundamental understanding of the next driving challenges by analyzing real-world logs collected on Waymo state-of-the-art fleet
- The Cognitive Robotics Laboratory, UC San Diego** **Sept. 2016 – June 2020**
Graduate Student Researcher: Advised by Prof. Henrik I. Christensen
- Research and build long-term robust and reliable robotic system in home settings
 - Study failure cases for robots in semi-structured environments and involving extensive human-robot interaction
 - Use Linux containers to improve the software architecture and components organization in service robot systems
 - Inject faults and failure to running robotic systems to test the robustness and discover design flaws
- Google LLC., Technical Infrastructure & Ads & Search** **Multiple Summers**
Software Engineer Intern & Research Intern
- Develop, optimize, and monitor services for large scale network modeling, monitoring, configuration automation, and software-defined network management (Summer 2016)
 - Collect, process, and analyze advertising campaign features to support Brand Lift products and business (Summer 2017)
 - Optimize the speech language identification system using machine learning, deep neural networks, and TensorFlow (Summer 2019)
- The Gadgetron / Bespoke Systems Group, UC San Diego** **Sept. 2014 – June 2016**
Graduate Student Researcher: Advised by Prof. Steven Swanson / Prof. Michael Taylor
- Researched for better circuit board design methodology by applying software engineering concepts and practices to the design flow
 - Built “BaseJump” open source ASIC prototyping platform; Developed hardware, firmware, and software that controls the ASIC emulation daughterboard
- State Key Laboratory of ASIC & System, Fudan University** **May 2012 – June 2014**
Research Assistant: Supervised by Prof. Lingli Wang & Prof. Wei Cao
- Built image recognition applications running on FPGA/CPU hybrid supercomputer and high-performance network using Verilog, C, and C++
 - Researched and implemented coarse-grained reconfigurable architecture (CGRA) prototypes that seeks tradeoffs between performance and flexibility

SELECTED
PROJECTS

- **Graduate Course Projects** at UC San Diego **Sept. 2014 – Dec. 2015**
 - Computer Architecture: MIPS R10K simulator (in C++)
 - Compiler: LLVM dataflow analysis of constant propagation, available expression, etc.
 - Cryptography: measuring energy cost of enabling SSL on Android devices
 - Data Mining: Amazon cross-category coherent visual styles recommender system
- **Remote Switch Control** Self-supported project **Jan. 2012 – Feb. 2012**
 - An IoT device that control switch through cellar network or Internet that has been operating stably for over 2 years
 - The complete design process of an embedded system including schematic capture, PCB layout, case design, soldering, assembling, firmware development, debugging, software and website designing, documentation

SELECTED
PUBLICATIONS

- **Shengye Wang**, Xiao Liu, Jishen Zhao, Henrik I. Christensen, “Robotic Reliability Engineering: Experience from Long-term TritonBot Development,” to appear in *Proceedings of the 12th Conference on Field and Service Robotics (FSR)*, 2019.
- **Shengye Wang**, Xiao Liu, Jishen Zhao, Henrik I. Christensen, “Rorg: Service Robot Software Management with Linux Containers,” in *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2019.
- **Shengye Wang**, Henrik I. Christensen, “TritonBot: First Lessons Learned from Deployment of A Long-term Autonomy Tour Guide Robot,” in *Proceedings of the 27th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, 2018.
- **Shengye Wang**, Chen Liang, Xuegong Zhou, Wei Cao, Chenlu Wu, Xitian Fan, Lingli Wang, “A Hardware Implementation of Bag of Words and Simhash for Image Recognition,” in *Proceedings of the 2013 International Conference on Field-Programmable Technology (ICFPT)*, 2013.
- **Shengye Wang**, Wei Cao, Lingli Wang, Na Wang, Ping Tao, “A Novel Structure of Dynamic Configurable Scan Chain – Bypassing Unconcerned Segment on the Fly,” in *Proceedings of the IEEE 10th International Conference on ASIC (ASICON)*, 2013, pp. 805–808.
- Xitian Fan, Chenlu Wu, Wei Cao, Xuegong Zhou, **Shengye Wang** and Lingli Wang, “Implementation of High Performance Hardware Architecture of SURF Algorithm on FPGA,” in *Proceedings of the 2013 International Conference on Field-Programmable Technology (ICFPT)*, 2013.
- Chen Liang, Chenlu Wu, Xuegong Zhou, Wei Cao, **Shengye Wang** and Lingli Wang, “An FPGA-cluster-accelerated Match Engine for Content-based Image Retrieval,” in *Proceedings of the 2013 International Conference on Field-Programmable Technology (ICFPT)*, 2013.

AWARDS &
DISTINCTIONS

- 2014 - 2017 UC San Diego Prestigious Kunzel-Powell Fellowship
- 2013 Selected in Fudan Undergraduate Research Opportunities Program
- 2013 Third Prize, The 3rd National University Students’ Opt-Sci-Tech Competition
- 2012 Third Prize, Fudan Programming Contest
- 2009 First Prize, Teenager Robot Competition in Zhejiang Province
- 2007, 2008 First Prize, National Olympiad in Informatics in Provinces

PROGRAMMING

C++, C, Python, etc.

ACTIVITIES

- **President** of Fudan Youth Lighting Association **Sept. 2011 – June 2012**
 - A society advocating electronic technology and a platform of sharing ideas
 - Organized several public activities on electronic DIY