

EXPERIENCE**Google, Mountain View, CA - Engineering Manager** 2018 - present

- Led the team for C++/Java API design, system architecture, and sensor management in ARCore.
- Managed hiring for my team and grew the team from 5 to 12 engineers.

Google, Mountain View, CA - Software Engineer 2014 - 2018

- Developed algorithms and applications for visual-inertial SLAM and sparse mapping in Project Tango.

hiDOF, South San Francisco, CA - Senior Systems Engineer 2013 - 2014

- Developed algorithms in C++ for visual monocular SLAM and wheeled vehicle motion planning.

Willow Garage, Menlo Park, CA - Research Intern 2010 - 2013

- Developed novel optimization-based controller and user interfaces for assisted collision-free teleoperation.
- Conducted user experiments and authored papers published in major robotics conferences.

Salisbury Robotics Lab, Stanford, CA - Graduate Researcher 2008 - 2013

- Developed new algorithms for haptic rendering and robot control.
- Implemented miniature stereo camera for robot gripper.

Consulting:**Motion Genesis, LLC** - Developed web-based visualization software for multi-body systems. 2011 - 2013**Applied Materials, Inc.** - Subcontracting consultant for robot motion visualization. 2012**SKILLS****Applied Math** - Expert in dynamics, kinematics, and 3D geometry as applied to robotics, simulation, and graphics.**Software Languages** - C++ (10 years) and Android Java (4 years) in large codebases featuring multi-threaded, event-driven, and multi-process designs, with a focus on maintainability. Proficient in Python, Javascript, and MATLAB.**Software Tools** - Expert knowledge of ROS. Experience with Eigen, OpenMP, MoveIt!, PCL, OpenCV, OpenGL, Qt. Development in Ubuntu Linux (expert) and Windows (proficient) using version control (git, svn) and issue tracking.**Electronics** - Circuit design/debugging, prototype PCB layout/fabrication, embedded systems.**Hardware** - General machine shop rapid-prototyping skills, and proficient in CAD tools (Solidworks).**Languages** - English (native), Spanish (fluent), French (proficient).**Other** - Private pilot, recording engineer, bassist.**EDUCATION****Ph.D.** Mechanical Engineering, Stanford University, 3.94 GPA 2013**Thesis Advisor:** Dr. J. Kenneth Salisbury**M.S.** Mechanical Engineering, Stanford University, 3.97 GPA 2009**B.S.** Engineering Physics, The University of Tulsa, 3.99 GPA 2007**TEACHING****Instructor:** ENGR 105 Controls, Stanford University, 70 students. 2015, 2016**Instructor:** ENGR 14 Statics, Stanford University, 77 students. 2014**Instructor:** ME 101 Dynamics, San Jose State University, 50 students. 2011, 2012, 2013**SELECTED PUBLICATIONS****A. Leeper**, K. Hsiao, M. Ciocarlie, I. Sukan, and K. Salisbury. Methods for Collision-Free Arm Teleoperation in Clutter Using Constraints from 3D Sensor Data. 2013 International Conference on Humanoid Robots. October, 2013. Atlanta, Georgia.**A. Leeper**, S. Chan, and K. Salisbury. Point Clouds Can Be Represented as Implicit Surfaces for Constraint-Based Haptic Rendering. ICRA, May 2012, St. Paul, MN.**A. Leeper**, K. Hsiao, M. Ciocarlie, L. Takayama, D. Gossow. Strategies for Human-in-the-Loop Robotic Grasping. HRI, March 2012, Boston, MA.