

WORK
EXPERIENCE

Google Deepmind

Boulder, CO

Senior Research Scientist

August 2022 - current

- Lead a project to create photo-realistic reconstructions of real-world 3D scenes in a robotics simulator using Neural Radiance Fields.
- Developed a SOTA open-vocabulary 3D object detection model using depth images and web-scale data and significantly improved Gemini 3D object detection performance.
- Worked in conjunction with teammates to develop and evaluate novel SOTA methods for relative positional encodings for vision transformers.
- Collaborated with and advised a student researcher on developing novel contrastive pre-training methods for action, text, and pointcloud encoders, culminating in a successful publication.
- Worked in conjunction with teammates to develop and improve novel methods for learning robot actions from unlabeled video data.
- Worked on stereo vision encoders for robotics policies as well as advised a student researcher working on stereo vision encoders for VLAs.
- Co-Author of [Gemini Robotics 2.0](#).

Thirdwave Automation

Union City, CA

Engineering Manager/Director

January 2022 - August 2022

- Managed a team of 4 focused on developing algorithms to allow the forklift to manipulate pallets.
- Coordinated the larger team of 7 with other directors to produce a product for a commercial pilot.

Applied Research Scientist

April 2021 - December 2021

- Researched novel ways to apply learning from demonstration to forklift automation.
- Conducted data-driven experiments to investigate viability of various approaches to incorporating demonstrations.

Tech Lead/Senior Software Engineer

October 2018 - March 2021

- Developed the planning and control stack for the autonomous forklifts from the ground up.
- Applied modern robotics algorithms to solve challenging tasks in the forklift domain.

EDUCATION **University of Washington**

Seattle, WA

Doctor of Philosophy

Summer 2018

- Major: Computer Science & Engineering
- Thesis Field: Robotics
- Advisor: Dr. Dieter Fox

Iowa State University of Science and Technology

Ames, IA

Master of Science

Summer 2013

- Major: Computer Science
- Co-Major: Human-Computer Interaction
- Thesis Field: Developmental Robotics
- Advisor: Dr. Alexander Stoytchev

Bachelor of Science

Fall 2011

- Major: Computer Science
- Emphasis: Artificial Intelligence and Machine Learning
- GPA: 3.92/4.0 *Summa Cum Laude*

TECHNICAL
SKILLS

Programming Languages, Libraries and Software Applications

- *Recent:* C++, Python, Cuda, Bazel, Git, Linux, OpenCV, Jax
- *Past:* PyTorch, C, Java, Matlab, Unix shell scripting, L^AT_EX, Windows, GNU make, Matlab Image Processing Toolkit, Robot Operating System, Weka, Scikit-Learn, Caffe, Tensorflow

Refereed Journal Articles

- **Schenck, C.**, and Fox, D., “Perceiving and Reasoning About Liquids Using Fully-Convolutional Networks,” *International Journal of Robotics Research (IJRR)*, Vol. 37, No. 4–5, pp. 452–471, April, 2018.
- **Schenck, C.**, Sinapov, J., Johnston, J., and Stoytchev, A., “Which Object Fits Best? Solving Matrix Completion Tasks with a Humanoid Robot,” *IEEE Transactions on Autonomous Mental Development*, Vol. 6, No. 3, pp. 226–240, 2014.
- Sinapov, J., **Schenck, C.**, Staley, K., Sukhoy, V., and Stoytchev, A., “Grounding Semantic Categories in Behavioral Interactions: Experiments with 100 Objects,” *Journal of Robotics and Autonomous Systems*, Vol. 62, No. 5, pp. 632–645, 2014.
- **Schenck, C.**, Sinapov, J., and Stoytchev, A., “Which Object Comes Next? Grounded Order Completion by a Humanoid Robot,” *Journal of Cybernetics and Information Technologies*, Vol. 12, No. 3, pp. 5–16, 2012.
- Sinapov, J., Bergquist, T., **Schenck, C.**, Ohiri, U., Griffith, S., and Stoytchev, A., “Interactive Object Recognition Using Proprioceptive and Auditory Feedback,” *International Journal of Robotics Research*, Vol. 30, No. 10, pp. 1250–1262, 2011.

Conference Articles (peer reviewed)

- Chun, I., Choromanski, K., Huang, S., **Schenck, C.**, “CLAMP: Contrastive Learning for 3D Multi-View Action-Conditioned Robotic Manipulation Pretraining.” In *Robotics: Science & Systems (RSS)*, Sydney, NSW, Australia, July 13–17, 2026.
- **Schenck, C.**, Reid, I., Jacob, M., Bewley, A., Ainslie, J., Rendleman, D., Jain, D., Sharma, M., Dubey, A., Wahid, A., Singh, S., Wagner, R., Ding, T., Fu, C., Byravan, A., Varley, J., Gritsenko, A., Minderer, M., Kalashnikov, D., Tompson, J., Sindhvani, V., Choromanski, K., “Learning the RoPEs: Better 2D and 3D Position Encodings with STRING.” *Proceedings of The International Conference on Machine Learning*, Vancouver, Canada, July 13–19, 2025.
- Xu, Z., Chiang, H.L., Fu, Z., Jacob, M.G., Zhang, T., Lee, T.E., Yu, W., **Schenck, C.**, Rendleman, D., Shah, D., Xia, F., Hsu, J., Hoech, J., Florence, P., Kirmani, S., Singh, S., Sindhvani, V., Parada, C., Finn, C., Xu, P., Levine, S. and Tan, J. (2025). “Mobility VLA: Multimodal Instruction Navigation with Long-Context VLMs and Topological Graphs.” *Proceedings of The Eighth Conference on Robot Learning (CoRL)*, Munich, Germany, November 6–9, 2024.
- **Schenck, C.**, and Fox, D., “SPNets: Differentiable Fluid Dynamics for Deep Neural Networks,” In *Proceedings of the Second Conference on Robot Learning (CoRL)*, Zurich, Switzerland, October 29–31, 2018.
- **Schenck, C.**, Tompson, J., Fox, D., and Levine, S., “Learning Robotic Manipulation of Granular Media,” In *Proceedings of the First Conference on Robot Learning (CoRL)*, Mountain View, CA, USA, November 13–15, 2017.
- **Schenck, C.**, and Fox, D., “Reasoning About Liquids via Closed-Loop Simulation,” In *Robotics: Science & Systems (RSS)*, Cambridge, MA, USA, July 12–16, 2017.
- **Schenck, C.**, and Fox, D., “Visual Closed-Loop Control for Pouring Liquids,” In *Proceedings of the International Conference on Experimental Robotics (ICRA)*, Singapore, May 29 – June 3, 2017.
- **Schenck, C.**, and Fox, D., “Towards Learning to Perceive and Reason About Liquids,” In *Proceedings of the International Symposium on Experimental Robotics (ISER)*, Tokyo, Japan, October 3–6, 2016.
- Sinapov, J., **Schenck, C.**, and Stoytchev, A., “Learning Relational Object Categories Using Behavioral Exploration and Multimodal Perception,” In *Proceedings of the 2014 IEEE International Conference on Robotics and Automation (ICRA)*, Hong Kong, China, May 31 – June 7, 2014.

PhD Thesis

- **Schenck, C.**, “Liquids & Robots: An Investigation of Techniques for Robotic Interaction with Liquids,” PhD Thesis, Paul G. Allen School of Computer Science & Engineering, University of Washington, Seattle, WA, August 2018.

Master’s Thesis

- **Schenck, C.**, “Intelligence Tests for Robots: Solving Perceptual Reasoning Tasks with a Humanoid Robot,” M.S. Thesis, Department of Computer Science & Human-Computer Interaction Program, Iowa State University, Ames, IA, July 2013.