

## contact

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katetolstaya.com  
github.com/katetolstaya

## languages

English fluency  
Russian fluency

## experience

- 2016–2021 **GRASP Laboratory** University of Pennsylvania  
*Research Assistant, Dr. Alejandro Ribeiro, Dr. Vijay Kumar*
- Developed an algorithm for decentralized control of robot teams using graph neural networks with PyTorch and TensorFlow
  - Tested and developed an algorithm for composable learning for obstacle avoidance in teams of ground robots
  - Implemented Q function approximation algorithms for reinforcement learning in continuous spaces using kernel methods
  - Integrated OpenAI Gym with the ROS, Gazebo and MAVROS-based OpenUAV simulation stack for modular reinforcement learning experiments
- 2020 **Waymo** Remote  
*Research Intern*
- Developed models for behavior prediction in interactive multi-vehicle scenarios
- 2019 **DeepMind** London, UK  
*Robotics Intern*
- Implemented population-based training for a dynamic robotics task in simulation and on a robotic platform
- 2018 **Microsoft Research** Redmond, WA  
*Research Intern, Adaptive Systems and Interaction Group*
- Implemented an inverse optimal control algorithm to learn from air traffic data
  - Developed motion planning applications for the AirSim autonomous vehicle simulator and worked to enable Linux support
- 2016 **Microsoft** Mountain View, CA  
*Electrical Engineering Intern, HoloLens Hardware*
- Designed test tools for signal integrity and DC resistance measurements
  - Implemented a software-defined power supply, including a DC/DC converter, embedded system design, and C-based software
- 2015 **Microsoft** Redmond, WA  
*Electrical Engineering Intern, New Product Introduction*
- Conducted failure analysis on next-generation hardware
  - Performed statistical analysis of data from the hardware assembly line to enable a factory process change and increase the return on investment

## education

- 2016–2021 **Ph.D.** in Electrical and Systems Engineering University of Pennsylvania
- 2016–2017 **M.S.E.** in Robotics University of Pennsylvania
- 2012–2016 **B.Sc.** in Electrical Engineering, Magna Cum Laude University of Maryland
- 2012–2016 **B.Sc.** in Computer Science University of Maryland

## awards

- 2018 **ESE Best Doctoral Citizen Award** University of Pennsylvania
- 2016 **National Science Foundation Graduate Research Fellowship** University of Pennsylvania
- 2016 **Omicron Delta Kappa Leadership Honor Society** University of Maryland