Kevin Robb

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Available: May – Dec. 2022

Education

Northeastern University, Boston, MA 2021–2023
M.S. Robotics, with CS Concentration (In Progress)

The University of Oklahoma, Norman, OK 2017–2021
B.S. Engineering Physics & B.S. Mathematics (Summa cum Laude)

Technical Knowledge

Languages: Python, R, JavaScript, C/C++, Java, LaTeX, HTML/CSS
Tools: Ubuntu Linux, Robot Operating System (ROS), Git, CAD/3D-Printing
Skills: Evolutionary Computation, Kalman Filtering, Probabilistic Robotics

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Work Experience

Robotics, Evolution, Adaptation, and Learning Laboratory, Norman, OK
NSF Research Assistant with Dr. Dean Hougen 2018–2021

- Experimented with the relationship between nurturing and risk in a simulated population.
- Applied evolutionary computation techniques to optimize Kalman Filter parameters for a simulated mobile robot in changing environments (outperforming manual tuning).

Office of Admissions & Recruitment, University of Oklahoma, Norman, OK
Campus Tour Guide (Team Lead) 2018–2021

- Gave general & personalized walking tours to prospective students & families.
- As a team lead, delegated tasks on shift, oversaw interviews, and trained new guides.

Projects

Intelligent Ground Vehicle Competition, Auto-Nav Challenge 2020–2021

- Led a team of 7 students in building a 3'×4' autonomous vehicle.
- Developed an Extended Kalman Filter to perform on-the-fly localization.
- Designed CAD assembly of the robot and custom-printed sensor mounts.
- Won 1st place and Rookie of the Year at the 2021 IGVC.

National Robotics Challenge, Autonomous Vehicle Challenge 2019–2020

- Constructed ROS architecture for a small race car that was able to complete a known course autonomously in minimal time.
- Produced navigation system to generate a trajectory and follow it using Pure Pursuit.
- Implemented a PID controller to publish commanded headings and velocities.

Sooner Competitive Robotics, Software Challenge 2020

- In-house, individual, simulated competition hosted by SCR during the pandemic due to remote work requirements. Consisted of an environment being scattered with obstacles and waypoints, with score depending on both time efficiency and waypoint completion.
- Created a three-node ROS system from scratch to localize, plan, and control the robot through the course using its IMU, LiDAR, and encoders.

Interests/Activities/Other

- Earned the 2020 Campus Life Award and 2021 Letzeiser Award at the University of Oklahoma.
- Won 2nd place in Hacklahoma 2021, and 3rd place in Hacklahoma 2020.
- Made *Bee Clicker*, a 2019 Hacklahoma project that instills a care for honeybees via a webgame.
- Published a paper in THURJ 2019, a student journal at the University of Oklahoma.
- Participant in the ACM International Collegiate Programming Competition, 2017–2020.
- FIRST Tech Challenge alumni and volunteer.